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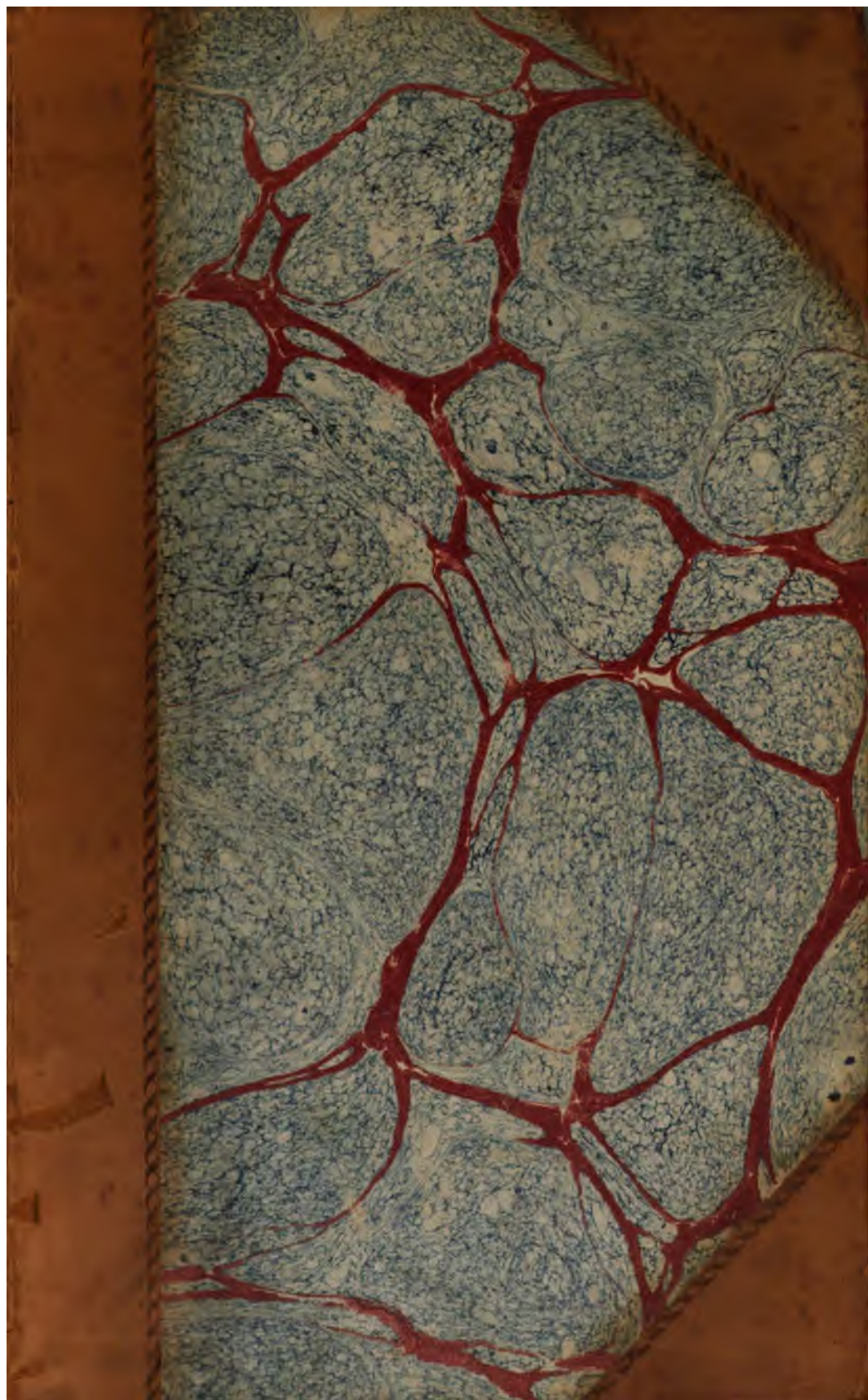
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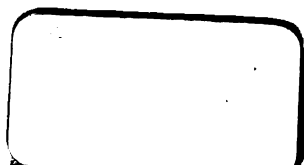
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THE
MEDICO-CHIRURGICAL
REVIEW,
AND
JOURNAL
OF
PRACTICAL MEDICINE.

(NEW SERIES.)

VOLUME THIRTY-THREE,

[1st of APRIL, to 30th of SEPTEMBER,]

1840.

VOL. XIII. of DECENNIAL SERIES.

EDITED

By JAMES JOHNSON, M.D.

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LONDON:
PUBLISHED BY S. HIGHLEY, 32, FLEET STREET,

Re-printed in New York, by Mr. Wood.

1840.

**PRINTED BY F. HAYDEN,
Little College Street, Westminster.**

CONTENTS

OF THE

MEDICO-CHIRURGICAL REVIEW,

No. LXVI. OCTOBER I, 1840,

[BEING No. XXVI. OF A DECENNIAL SERIES.]

REVIEWS.

I.

Statistical Reports of the Health of the Navy, for the years 1830, 31, 32, 33, 34, 35 and 36, in the South American, West Indian, North American, Mediterranean, and Peninsula Commands	297
1. South American Station.. .. .	307
2. West Indies and North America	320

II.

On the History and Properties, Chemical and Medical, of Tobacco. By HENRY WILSON CLELAND, M.D.	332
1. History of Tobacco	334
2. Importation of Tobacco into Europe	338
3. Analysis of Tobacco	343
4. Action of Tobacco.. .. .	344
5. Sanatory Effects of Tobacco.. .. .	344

III.

MEDICAL RELIEF OF THE SICK POOR IN ROME AND PRUSSIA.

I. Reminiscences of Rome: or a Religious, Moral and Literary View of the Eternal City.. .. .	345
II. Reglement fur die Stadt-Armen Krankenpflege der Kieisigen Commun, &c. (Rules for taking care of the Town's Sick-poor, &c.).. .. .	
III. Summerische Uebericht der im Jahre 1838, im Koniglichen. Charite-Kranken- hause verpflegten Kranken, nebst eivem Ueberblick der Beranderungen dieser Austalt in dem letzten Decennium. (A Summary account of the Patients who were treated in the Charity Infirmary during the year 1838, &c.)	
1. Medical Relief in Rome.. .. .	346
2. Medical Institutions for the Relief of Sick Poor in Prussia	350

IV.

I. On the Nature and Structural Characteristics of Cancer, and of those Morbid Growths which may be confounded with it. By J. MULLER, M.D.	362
II. Cyclopædia of Practical Surgery, Part VI.—Cancer. By W. H. WALSH, M.D.	
1. Of Cartilaginous Tumors, or Enchondroma	362
A. General Description of Enchondroma	362
B. Different Forms of Enchondroma in the Bones	364
C. Microscopic Examination of Enchondroma.. .. .	365
D. Chemical Analysis of Enchondroma	365
E. History of the Development of Enchondroma	368
F. Nature of Enchondroma	369
2. Adipose Tumors	372
A. Lipoma	372
B. Adipose Cysts.. .. .	373
C. Laminated Adipose Tumor—Cholesteatoma.. .. .	373
3. Of Compound Cystoids and Cysto-sarcomatous Growths.. .. .	377
A. Of Compound Cystoid Growths	377
B. Of Cysto-sarcomatous Growths	378
4. Nosological Position of Cancer	381
5. Effects of Cancer on surrounding Parts	385

V.

The Transactions of the Provincial Medical and Surgical Association. Volume VIII. 397	
---------------------------------------------------------------------------------------	--

1. Report of the Section appointed to enquire into the present State of Vaccination	397
A. Affinities between Small-pox and Cow-pox.. .. .	398
B. Correct Vaccination and Impediments thereto	401
C. Protecting Power of Vaccination	403
D. Small-pox after Small-pox	403
E. Revaccination	404
F. State of the Population with regard to Small-pox and Vaccination ..	405
2. Observations on the Variolæ Vaccinæ, as they occasionally appear in the Vale of Aylesbury, &c. By Robert Ceely, Esq.	408
A. Vaccination of Man with Primary Lymph	410
B. Vaccination of the Cow with Primary Lymph	411
C. Variolation of the Cow.. .. .	413
VI.	
Memoires de l'Academie Royale de Medecine	415
1. Researches on the Diseases of Old Age. By M. Prus	415
2. Memoir on the Operation for Stone. By M. Souberbielle	419
3. On the most frequent Diseases in Iceland. By Dr. Thorstensen	424
4. Dr. Cornuel on Dysentery	426
5. Researches on the Structure of the Cortical Substance of the Cerebral Convolutions. By Dr. Baillarger	426
6. Statistics of Acute Pleuropneumonia. By Dr. Pelletan	428
7. Memoirs on Poisoning. By M. Orfila.. .. .	428
8. New Researches on the Human Urine. By M. Lecanu	432
9. Vaginal Cystocele operated on in a New Method. By M. Jobert	433
VII.	
Crania Americana; or a Comparative View of the Skulls of various Aboriginal Nations of North and South America. By SAMUEL GEORGE MORTON, M.D.	434
1. Distribution of the Human Species into Races	438
VIII.	
Acute Hydrocephalus. By DAVID D. DAVIS, M.D.	465
1. The Symptoms and Diagnosis	465
2. Predisposing Causes	466
3. Exciting Causes	467
4. Proximate Causes	467
5. Treatment	468
IX.	
A practical Work on the Diseases of the Eye, and their Treatment, Medically, Topically, and by Operation. By FREDERICK TYRRELL, Esq.	471
1. Preliminary Remarks	472
2. Simple Acute Ophthalmia	476
3. Pustular Ophthalmia	478
4. Catarrhal Ophthalmia	478
5. Purulent Ophthalmia	479
6. Chronic Inflammation of the Conjunctiva following Purulent and Catarrhal Ophthalmia	484
7. Scrofulous Ophthalmia	485
8. Chronic Scrofulous Ophthalmia	486
9. Exanthematous Ophthalmia	487
PERISCOPE.	
Spirit of the Foreign Periodicals, &c.	
1. Remarks on Stammering. By a Sufferer	489
2. Statistical Researches on Pneumonia.. .. .	491
3. Suggestion in Paracentesis Thoracis	492
4. M. Pigeaux on the Diseases of the Heart	493
5. On the Auscultatory Signs of the early period of Phthisis. By M. Fournet..	494
6. Apoplexy of the Lungs, a frequent cause of Sudden Death	496
7. M. Piorry on Hæmitis.. .. .	501
8. Case of Puzzling Abdominal Tumor, with Remarks.. .. .	505

CONTENTS.

vii

9. M. Andral on the Value of Chemical and Physiological Experiments	508
10. New sort of Medical Puffing	510
11. Sulphate of Quinine in Enlargement of the Spleen, and in Dropsies after Agues. By Dr. Levy	510
12. MM. Gelis and Conté on the Remedial Power of the Lactate of Iron	511
13. On the Frequency of the Pulse in New-born Infants	512
14. Professor Ammon on the Treatment of Iritis	512
15. On Incontinence and Retention of Urine in Old Men	513
16. Prolapsus Recti cured by a New (?) Operation	515
17. Novel Monstrosity—Portion of a Fœtus developed at the Expense of the Testicle	516
18. M. Guérin on Subcutaneous Orthopædy	519
19. M. Guérin on the Subcutaneous Incision of Joints	519
20. On congenital Subluxations of the Femur	520
21. Operative Midwifery in Holland and Germany	521
1. Case of Symphysiotomy	521
2. Cases of Cæsarian Operation	521
3. Remarks	522
22. On the Sweating Regimen of Dr. Priessnitz at Graefenberg	523
23. Physiology of Ventriloquism	527
24. On the New (Decimal) System of Weights in France	529
25. Professional Aphorisms	531
26. On the Cause of Milky Blood	532
27. On Involuntary Seminal Discharges	533
28. Ioduret of Iron in the Treatment of Syphilitic Ulcers	534
29. Poisoning from Arsenic successfully treated with the Peroxide of Iron	534
30. German Treatment of Local Paralysis	535
31. Hepatic Abscess; Discharge of a Biliary Calculus	535
32. On Artificial Nipples of Ivory	535
33. On the Preservation of Bodies for the purposes of Dissection	536

Clinical Review, and Hospital Reports.

WESTMINSTER OPHTHALMIC HOSPITAL.

1. Half Yearly Report laid before the Governors of the Westminster Ophthalmic Hospital. By Charles W. Guthrie, Jun.	537
Cure of Squinting by Division of one of the Recti Muscles	537

MONTROSE LUNATIC ASYLUM.

2. Abolition of Restraint	542
3. Benefits of the Penny Postage	545

BETHLEM HOSPITAL.

4. Report of the Commissioners for Inquiring into Hospitals	545
5. On the Advantage of Studying Rare Cases	547

MERCER'S HOSPITAL, DUBLIN.

6. New Instrument for Tapping	548
---------------------------------------	-----

DREADNOUGHT HOSPITAL SHIP.

7. Condition of an Elbow nearly three years after Excision of the Joint	549
---------------------------------------------------------------------------------	-----

HOTEL DIEU.

8. Barbarous Operation for Fistula. By M. Roux	549
--------------------------------------------------------	-----

GLASGOW ROYAL INFIRMARY AND LOCK HOSPITAL.

9. Dangers from the exhibition of the Iodide of Potassium	550
-------------------------------------------------------------------	-----

PENNSYLVANIA HOSPITAL.

10. Statistical Report of the Cases of Amputation at this Hospital during the year 1838.	551
11. Report of Surgical Cases treated during the Months of July, August, September, and October, 1839. By G. W. Norris, M.D.	553
1. Ununited Fracture	553
2. Rupture of the Ligament of the Patella	554
3. Wound of the Palm of the Hand—Secondary Hæmorrhage—Ligature of the Radial—Return of Hæmorrhage—Cure by Pressure	554
4. Difficulty of Diagnosis of Injuries about the Hip-joint	555
5. Cancer of the Breast in a Male	556
6. Compound Fracture of the Cranium	556

MASSACHUSETTS GENERAL HOSPITAL.

12. Statistics of the Amputation of Large Limbs	559
---------------------------------------------------------	-----

Spirit of the British and American Periodicals.

1. Some Pathological Facts	561
1. Precautions in operating for Empyema	561
2. Traumatic Emphysema without Laceration of the Pleura, or Fracture of the Ribs	561
3. Softening of both Lobes of the Cerebellum	562
4. Placid State of the Heart in Fever	562
5. Coexistence of Scirrhus of the Pylorus and Tubercles of the Lungs	562
6. Is Bright's Kidney the cause of Albuminous Urine ?	563
7. State of the Lungs in Hooping-Cough	564
8. True Aneurism of the Common Iliac Artery, opening into the Common Iliac Vein	564
2. Mr. Smith on the Diagnosis and Pathology of Fractures of the Neck of the Femur	564
3. M. Donovan on the Hydrocyanoferrate of Quinine	566
4. Mr. Donovan on Cod Oil	566
5. Rigidity of the Lower Jaw, cured by Division of the Anterior Portion of the Masseter	567
6. Case of Imperforate Vagina, and Menstruation (from the Bladder ?)	568
7. Malformation of the Oesophagus	569
8. Analyses of the Mineral Waters of Brighton	569
9. Influence of the Left Bronchus in closing the Ductus Arteriosus	571
10. Rupture of the Heart into the Pericardial Sac	571
11. Resolutions of the Medical Association of Ireland	572
12. Removal of part of the Sphincter for Prolapsus Ani	573
13. Leech Gathering in Russia	573
14. Advantages granted to Naval Medical Officers	573

Bibliographical Notices.

1. <i>Traité Philosophique de Medecine Pratique.</i> Par A. N. Gendrin, D.M... ..	} 574
2. <i>Traité Clinique du Rheumatisme Articulaire.</i> Par J. Bouillaud... ..	
3. <i>Du Traitement Moral de la Folie.</i> Par F. Leuret	
4. <i>Manuel Pratique de Magnetisme Animal.</i> Par Alph. Teate, M.D... ..	575
5. The Retrospective Address delivered at the Seventh Anniversary Meeting of the Provincial Medical and Surgical Association. By John Addington Symonds, M.D.	576
6. An Address upon laying the Foundation Stone of the Queen's Hospital, Birmingham. By Vaughan Thomas, B.D.	578
7. <i>The Maternal Management of Children.</i> By Thomas Bull, M.D.	579
8. <i>Pharmacopée Universelle, &c.</i>	580
9. Recent Works on Anatomy and Physiology	580
1. Quain's Plates	580
2. <i>The Anatomist's Vade Mecum.</i> By W. J. Erasmus Wilson.. .. .	580
3. <i>Elements of Physiology.</i> By J. Muller, M.D.	581
10. <i>An Essay on the Treatment and Cure of Pulmonary Consumption.</i> By George Bodington, Surgeon	581
11. <i>On Cutaneous Diseases.</i>	
1. <i>Commentaries on Diseases of the Skin.</i> By A. T. Thomson, M.D.	583
2. <i>Illustrations of Cutaneous Disease.</i> By Robert Willis, M.D.	584
12. <i>Zoology and Natural History.</i>	
1. <i>A General Outline of the Animal Kingdom, and Manual of Comparative Anatomy.</i> By Thomas Rymer Jones, F.Z.S. &c... .. .	584
2. <i>A History of British Birds.</i> By William Yarrell, V.P.Z.S.	584

Extra-Limites.

1. <i>Case of Dracunculus or Guinea-Worm</i>	585
2. <i>Remarkable instance of Rupture of the Duodenum, &c.</i> By Sir David J. H. Dickson, F.R.S.E.	586
3. <i>Carbonate of Iron as an Antidote to Arsenic</i>	592
4. <i>Dr. Murphy's Reclamation.</i>	594
5. <i>Solutio Magnesie Bicarbonatis</i>	597
<i>Bibliographical Record</i>	599

CONTENTS

OF THE

MEDICO-CHIRURGICAL REVIEW,

No. LXV. JULY 1, 1840,

[BEING No. XXV. OF A DECENNIAL SERIES.]

REVIEWS.

I.

Statistical Reports on the Sickness, Mortality, and Invaliding among the Troops in Western Africa, St. Helena, the Cape of Good Hope, and the Mauritius	1
1. On the Sickness and Mortality among the Troops on the Western Coast of Africa	2
A. Sierra Leone Command	2
B. Cape Coast Command	12
2. On the Sickness and Mortality among the Troops serving in the Island of St. Helena	17
3. On the Sickness and Mortality among the Troops at the Cape of Good Hope	22
A. The Cape District	24
B. Eastern Frontier District	28
4. On the Sickness and Mortality among the Troops serving in the Mauritius, ..	35

II.

The Retrospective Address in Surgery, from July 1836, to July 1839, delivered before the Meeting of the Provincial Medical Association at Liverpool on the 24th July. By J. H. JAMES, Esq.	47
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----

III.

The Present State of Ophthalmic Surgery in France and England compared	49
Inflammatory Affections of the Cornea	54

IV.

Tagebuch einer Medicinischen Reise nach England, Holland, und Belgien, von Dr. G. VARENTRAPPE. ((Journal of a Medical Tour in England, &c.)	62
London Hospitals	66

V.

Treatise on the Ear; including its Anatomy, Physiology, and Pathology. By JOSEPH WILLIAMS, M.D.	73
---------------------------------------------------------------------------------------------------------	----

VI.

A System of Practical Medicine, comprised in a Series of Original Dissertations. Arranged and edited by ALEXANDER TWEEDIE, M.D.	81
1. Pathological Introduction	81
2. Inflammation	83
3. Infantile Remittent Fever	87

VII.

Observations on the Diseases incident to Pregnancy and Childbirth. By FLEETWOOD

CHURCHILL, M.D.	95
1. Diseases incident to Pregnancy	96
A. On the Local and Constitutional Consequences of Pregnancy	96
B. The General Management of Pregnant Females	97
C. Diseases of the Genital Organs in Pregnant Females	97
D. Disorders from Sympathetic Irritation	100
E. Disorders arising from Mechanical Pressure or Distention	107
2. Diseases incident to Childbed	109
A. On the Management of the Convalescence of Puerperal Women	109

VIII.

On the Nature and Structural Characteristics of Cancer, and of those Morbid Growths which may be confounded with it. By J. MULLER, M.D.

1. Uncertain external Characters of Morbid Growths	119
2. Chemical Examination of Morbid Growths	123
3. Microscopic Characters of Morbid Growths	124
4. Development of Morbid Growths	127
5. Development of Caudate Corpuscles	128
6. On the Minute Structure of Carcinomatous Growths	129
A. Of Carcinomatous Growths in general	129
B. Scirrhus, or Carcinoma Simplex, or Carcinoma Fibrosum	131
C. Carcinoma Reticulare	133
D. Carcinoma Alveolare	135
E. Carcinoma Melanodes	136
F. Carcinoma Medullare	137
G. Carcinoma Fasciculatum	140
H. Nature of Carcinoma	143

IX.

The Cyclopædia of Practical Surgery, &c. Edited by WM. B. COSTELLO, M.D. &c.

1. Mr. Bennett Lucas on Asphyxia	148
2. Dr. Benson on Auscultation	160
3. Dr. Macfarlane on Avulsion	150
4. Mr. H. J. Johnson on Balanitis	152
5. Mr. A. Ure on Blisters	154
6. Mr. S. Wells on Diseases of Bones	155
7. Mr. H. J. Johnson on Bubo	156

X.

The Anatomy of Suicide. By FORBES WINSLOW, M.R.C.S.

1. Is the Act of Suicide the result of Insanity?	161
2. Can Suicide be prevented by Legislative Enactments?	165

PERISCOPE.

Bibliographical Notices.

1. Parochial Medical Relief, considered in a Letter to the "Poor Law Commissioners," &c. By E. T. Meredith, M.R.C.S.	168
2. Illustrations of the Comparative Anatomy of the Nervous System. By Joseph Swan. Part V.	173

3. Notice sur le Monæsia.. .. .	174
4. A Memoir on Extra-Uterine Gestation. By Dr. William Campbell	175
5. Practical Observations on Abortion. By J. S. Streeter	178
6. The Eye : a Treatise on the Art of preserving this Organ in a healthy condition, and of improving the Sight, &c. By J. Ch. August. Franz, M.D.	184
7. The intimate Structure of Secreting Glands. By John Muller, M.D.	189
A. Natural Order of Glands, arranged according to their anatomical characters	190
B. Summary of Anatomical Observations on the intimate structure of Glands	191
C. Physiological Corollaries on Secretion, particularly of Glands	192

Spirit of the Foreign Periodicals, &c.

1. M. Lisfranc on the necessary Alliance between Medicine and Surgery	193
Absurd Practice in some of the Paris Hospitals	193
2. M. Lisfranc on some of the Diseases of the Mamma	194
3. On the Influence of Splenic Engorgement on Agues	196
4. M. Cazenave on Scabies	198
5. On Convulsions during Pregnancy and Delivery	199
6. Chilblains treated with Mustard Baths	200
7. Memoranda on Cutaneous Transplantations	200
8. M. Trosseau on the Pommade Antimoniacale, and on Heat as Vesicants	203
9. On the Grey Deposit upon Urinary Calculi. By M. Civiale	204
10. On the Ophthalmia in the Belgian Army	207
11. On the Purulent Ophthalmia of Children	209
12. M. Lisfranc on certain Fallacies in Surgical Works	211
A. Facility of Diagnosis in general.. .. .	211
B. Difficulty of Diagnosis in certain cases	211
13. On Medical Meteorology	212
14. Fatal Effects from the Use of Colchicum and of Tartrate of Antimony.. .. .	215
15. Memoranda on Insanity	218
16. M. Baudens on Glandular Swellings	220
17. On the Treatment of Certain Cases of Deafness	221
18. Remarks of a German on English Obstetricry	223
19. On Epidemic Hemeralopia	223
20. M. Guerin on Subcutaneous Wounds.. .. .	225
21. M. Guerin on Club-foot, Wry-neck, &c.	226
22. M. Malgaigne on Herniæ	229
A. Relative Frequency at different Periods of Life	230
23. MM. Rayer and Breschet on Glanders	231
24. On the Structure and Connexions of the Placenta	237

Clinical Review, and Hospital Reports.

GUY'S HOSPITAL.

1. Guy's Hospital Reports. No. X. April, 1840. Edited by George H. Barlow, M.A. &c. and James P. Babington, M.A.	241
1. Morbid Consequences of undue Lactation. By S. Ashwell, M.D.	241
2. Practical Hints on the Treatment of Stricture. By Bransby B. Cooper, F.R.S.	244
3. Excision of the Elbow-joint. By C. Aston Key	247
4. History of a Gunshot Wound, in which the Patella was carried away and the Knee-joint completely laid open. By Mr. Ward of Huntingdon	248

5. Case of Dislocation of the Shoulder-joint, with Fracture of the Humerus.
By J. A. Hingeston 249
6. Cases and Observations illustrative of Renal Disease accompanied with the
Secretion of Albuminous Urine. By R. Bright, M.D. 251
 - A. Albuminous Urine in connexion with Scarlatina 254
7. Cases of Albuminous Urine, illustrative of the Efficacy of Tartar Emetic, in
combination with other Antiphlogistic Remedies, in the Acute forms of that
Disease. By George H. Barlow, M.A. 263
8. On the Proportion of Urea in Certain Diseased Fluids. By G. O. Rees,
M.D. &c. 268
9. Observations on the Existence of certain Elements of the Milk in the Urine
during Utero-Gestation, and on the Application of this Fact to the Diagnosis
of Pregnancy. By Golding Bird, M.D. &c. 270

Spirit of the British and American Periodicals.

1. On the Nitrate of Silver in some Affections of the Mucous Membranes. By
Alfred Hudson, M.D. 273
2. A Case of Hydrophthalmia successfully treated by Mercury. By James O'Beirne,
M.D. &c. 274
3. Some Hints on the Operative Surgery of Tumors. By Alexander Stevens,
M.D. &c. 275
 - A. Extirpation of Encysted Tumors of the Scalp and Eyelids 276
 - B. Extirpation of Solid Tumors 276
 - C. Dangers of Operations 278
 - D. Introduction of Air into the Veins 279
4. Dr. Law on Diseases of the Brain, dependent on Disease of the Heart 279
5. Hospitals of Malta 280
6. Section of the Hamstring Tendons for, Contracted Knee-Joint. By Dr. Burleigh
Smart 281
7. Observations on the Employment of Cimicifuga in the treatment of Chorea .. 282
8. Cure of Squinting by division of the Rectus Internus Muscle.. .. . 282
9. Studentships in Anatomy—College of Surgeons 283
10. Return of Cases of Hydrocele treated at the Native Hospital, Calcutta, after the
Plan of J. R. Martin, Esq. from 9th March, 1832, to 31st Dec. 1839 284
11. Unfermented Bread 284
12. Testimonial to Sir B. Brodie, Bart. 285
13. The Respirator 286
14. An Atlas of Plates illustrative of the Principles and Practice of Midwifery. By
Francis H. Ramsbotham, M.D. 286
- Bibliographical Record.. .. . 286

Extra-Limites.

- Observations on the Oxide of Silver; and an Abstract of the Cases in which it has
been administered. By C. H. B. Lane, Esq. 289

THE
Medico-Chirurgical Review,
No. LXV.

[No. 25 of a Decennial Series.]

APRIL 1, to JULY 1, 1840.

STATISTICAL REPORTS ON THE SICKNESS, MORTALITY, AND INVALIDING AMONG THE TROOPS IN WESTERN AFRICA, ST. HELENA, THE CAPE OF GOOD HOPE, AND THE MAURITIUS.
Prepared from the Records of the Army Medical Department and War-Office Returns. 1840.

Our readers will of course remember the particularity with which we noticed the official documents, relating to the health of our troops in the West Indies, and our North American colonies. Such statistical records have a wider bearing than the military force on which they have been founded, and affect not only our ideas of the salubrity of particular quarters of the globe, but the very principles of medicine itself. On this account, we seize the present opportunity of recurring to a subject of such interest to the whole profession, and of carrying on our notice of these statistical reports, which, much to its credit, are emanating from the War-Office.

Major Tulloch informs us, in his usual brief Introduction, that, in the present volume, are submitted the following Reports and relative Appendices:—

- I. On the Sickness, Mortality, and Invaliding among the Troops serving on the Western Coast of Africa.
- II. On the Sickness, Mortality, and Invaliding among those serving in St. Helena.
- III. On the Sickness, Mortality, and Invaliding among those serving at the Cape of Good Hope.
- IV. On the Sickness, Mortality, and Invaliding among those serving at the Mauritius.

With these would have been included a similar Report on the Health of the Troops in the Australian Colonies, but so many of the detachments there have been under the charge of civil practitioners, who do not furnish returns to the Army Medical Department, that the necessary information in regard to the prevailing diseases, cannot at present be procured. This defect, however, may yet be supplied; and in the meantime, the extreme salubrity of the climate may be estimated from the circumstance, that on the average of 20 years from 1817 to 1836 inclusive, the mortality did not exceed 14 per thousand of the force annually, whereof more than a fifth part arose from violent or accidental deaths, principally attributable to the nature of the duties on which the troops were employed. Thus the mortality from

No. LXV.

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disease alone could have amounted to little more than one per cent. annually, being lower than in any other colony, except the eastern provinces of the Cape of Good Hope, to which the climate of Australia is in many respects similar.

We are glad to observe a warmer acknowledgment of medical services, in the construction of these Reports. Such courtesy is becoming as well as due. The gentlemen to whom Major Tulloch expresses his obligations are, Deputy Inspector General Marshall and Staff Assistant Surgeon Balfour.

I. ON THE SICKNESS AND MORTALITY AMONG THE TROOPS ON THE WESTERN COAST OF AFRICA.

The British settlements in Western Africa are scattered over a line of coast which, from St. Mary's on the Gambia to Accra, is nearly 1600 miles in extent, and consequently presents considerable diversity in climate, soil, surface, and geological structure. Unfortunately all spots agree in this—their deadly influence upon European life. The Report opens indeed with a significant comment on the pestilential character of these fatal shores—it mutilates even statistic documents.

"It is to be regretted that on this coast, where the baneful effects of climate on the European constitution exhibit themselves in their most concentrated form, and where it would have been of the utmost importance to trace the diseases of each station with the same minuteness as in previous Reports, the materials are neither so ample as those from other colonies, nor admit always of the same arrangement as has been hitherto adopted. The unceasing occupation of their professional duties in so unhealthy a climate left medical officers little time for making the proper distinction between the diseases of white and black troops; and their death has frequently prevented information from being obtained at those periods when the mortality was at its greatest height, and when an accurate statement of the particular circumstances under which it occurred would have been most interesting and useful."

Vos o quibus integer ævi
Sanguis, ait, solidæque suo stant robore vires;
Vos agitate fugam.

On the cession of Gores and Senegal to the French, the only stations occupied by the British troops on the coast were Sierra Leone, Gambia, and the Isles de Loss; but in 1821 the settlements of Cape Coast Castle and Accra, with their dependencies, having been transferred to the British Government by the African Company, were formed into another Command, of which it will be necessary to investigate the sickness and mortality separately.

A. *Sierra Leone Command.*

Major Tulloch offers a brief account of the localities of the stations of Sierra Leone, the Isles de Loss, and Gambia.

The peninsula of Sierra Leone comprehends a tract of land extending about 18 miles from north to south, and 12 from east to west, consisting principally of a range of conical mountains from 2000 to 3000 feet in height, surrounded by a belt of level ground from one to five miles in

breadth, to which have recently been added the Banana Islands and some minor acquisitions of territory.

From the north to the south-east the whole country adjoining the peninsula is intersected by numerous creeks and rivers, which, overflowing during the rainy season, form extensive swamps in every direction. Indeed, it may be stated generally, that the whole coast from Senegal to Sierra Leone, a distance of above 700 miles, is exceedingly low, being not more than a few feet above the ocean; that the rivers with which it is intersected are sluggish in their course, and flooded during the rains, when the mud they deposit, and the moisture they supply, give birth to an interminable wilderness of forest and brushwood, among which lies rotting the decayed vegetation of many centuries.

From the noxious agencies likely to be generated in such a tract, the peninsula of Sierra Leone, however, is sheltered by the mountain ranges which form the boundary in that direction, while on the south it is washed by the Atlantic, and on the north by an estuary terminating in the Sierra Leone river, so that it seems protected by nature from all extraneous sources of disease, except such as may originate on the opposite side of the river, called the Bulam shore; and, so far as can be ascertained, there is nothing within the limit of the colony itself, likely to induce that sickness which has proved so fatal to every class of the population.

From the census of 1838, it appears that the population of Sierra Leone then consisted of about 42,000 persons—of whom there were :—whites, 83 males, 19 females; blacks, 21,559 males, 18,381 females; aliens, 1,681 males and females.

Free Town, the capital, stands on the south bank of the Sierra Leone river, about five miles from the sea. At the distance of about a mile it is surrounded on the west, south, and east, by a semi-circular range of lofty hills, clothed to the summit with high trees and thick underwood, and to which there is a gradual ascent from the river. This position gives it a very pleasing aspect, by no means calculated to impress an idea of insalubrity, and as the soil is gravelly, and has a gentle slope, the rain is speedily absorbed or drained off even during the most inclement periods of the wet season. The houses are mostly built of wood and disposed in broad and regular streets, in many places yet uncleared of the brush and underwood with which the site was originally covered. There is little cultivation in the immediate vicinity of the town, the soil not possessing great capabilities for agriculture; but considerable progress has been made at some of the villages in the interior, where it is better adapted for that purpose.

The town is elevated about fifty feet above the river, the banks of which were formerly covered with a dense barrier of mangrove bushes. This, having been supposed a fertile source of disease, was cleared to a considerable extent, without however effecting any obvious improvement in salubrity. The distance from the Bulam shore opposite is about seven miles; the soil on that shore is a ferruginous clayey loam, which is apt to form marshes during the rainy season, owing to the surface being almost level. In the earlier years to which this Report refers it was covered with thick brush and underwood, and supposed in some instances to have given rise to the unhealthiness of the colony; but though cultivation has since made consider-

able progress in that quarter, and the face of the country is rapidly improving, no corresponding amelioration has been permanently manifested in salubrity.

The *Isles de Loss* lie about 60 miles north-west of Sierra Leone. Only three are habitable. The nearest is three, and the most distant eight, miles from the main land. A few disbanded black soldiers and two or three Europeans, who have established a factory there, form, with the detachment, the only inhabitants. Crawford's Island, on which the troops are stationed, is the centre of the group, and is described as entirely composed of granite, elevated 250 feet above the level of the sea, and about a mile and a half in length, though scarcely 100 yards in breadth. It is entirely exempt from that exuberance of vegetation which prevails on the main land, and in no part of it, nor in any of the other islands, are either pools or marshes to be found.

The *Island of St. Mary's*, the principal settlement on the Gambia, is about five miles in length and one in breadth, and consists merely of a sand-bank, formed by the confluence of the tides at the mouth of the river. It is consequently in many places under high-water mark, which renders it, during the rainy-season, one complete marsh. The soil is too light to be well fitted for agriculture, but, where intersected by creeks and aided by the alluvial deposits brought down by the river, gives birth to dense masses of mangroves, underwood, and every species of rank vegetation, which, particularly during the hot season, create most offensive effluvia throughout the whole island.

The *Town of Bathurst* is built on the east side of the island, along the beach, upon a ridge of sand somewhat elevated above the level of the sea. Efforts have of late been made, by the construction of dykes and drains, to render the town less swampy during the rainy season, and thus improve its salubrity, but without much success. In 1826 the inhabitants, exclusive of the military, amounted to 1867, of whom only 20 were Europeans.

Such is the *locale* of the Sierra Leone Command. The main characteristic of the *climate* is extreme humidity, a circumstance which is sufficiently attested by the fact of more rain having fallen in two successive days, the 22nd and 23rd of August, 1828, than in Britain throughout the whole year. The quantity of rain at the Gambia is not so great as at Sierra Leone.

The *Temperature*, compared with that of similar latitudes exhibits no very marked peculiarity. With the exception of Sierra Leone, where the diurnal range of the thermometer rarely exceeds 10°, sudden transitions from heat to cold, with dense and chilling fogs for many months of the year, form the general characteristic of the whole west coast of Africa, particularly at the Gambia, where the thermometer has sometimes fallen as low as 62° in the morning, during October, November, and December, and then risen to 80° in the course of a few hours. These sudden changes of temperature, observes Major Tulloch, are by no means uncommon in tropical climates. The thermometer, for example, at Seringapatam, has been observed at 54° in the morning, accompanied by cold dense fogs, and as high

as 92° by mid-day, being a much wider range than on this coast, without any great degree of mortality being thereby induced.

The Peninsula of Sierra Leone, though beyond the trade winds, enjoys a regular succession of sea and land breezes, the former commencing about nine o'clock A.M. from the West-North-West, always cool and pleasant, the latter setting in about the same hour in the evening, from the East and South-East, but generally heated, and laden with humid exhalations from the low and swampy ground over which it passes. The interval between the dying away of one breeze and the springing up of another is always hot and oppressive.

At the Isles de Loss and Gambia the land and sea breezes are generally from the north-west and south-west. All along the coast there prevails, during the months of December, January, and February, a dry, parching, easterly wind, termed the Harmattan; but, except on catarrhal and pulmonary affections, its influence seems rather favourable than prejudicial to health.

The *wet season* extends, at Sierra Leone and the Isles de Loss, from May to November, and at the Gambia from June to September or October, and is always ushered in and carried off by tornados. Nothing can exceed the gloominess of the weather during this period: the hills are wrapped in impenetrable fogs, and the rain falls in such torrents as to preclude that exercise and amusement which are so necessary to invigorate the body and give energy to the mind. At this period, the diseases which prove so fatal on the coast have generally made their appearance, though there have been so many exceptions, that they can scarcely be said to belong peculiarly to any season.

During most of the period under review, the force consisted of a colonial corps of white and black troops, the former unfortunately of a class the least fitted to contend with such a climate, being principally soldiers allowed to volunteer their services as a commutation of punishment, and whose vices and intemperance, no doubt, in many instances facilitated the inroads of disease.

Till 1817 the number of white and black soldiers was nearly equal, but in that year most of the former were removed to the frontier settlements of the Cape of Good Hope; and in 1819 the whole corps was disbanded and replaced by the 2nd West India Regiment, composed, with the exception of a few serjeants, entirely of negroes. In 1823, however, a war having broke out with the Ashantees, the white soldiers formerly disbanded at the Cape of Good Hope were hastily re-embodied and sent to the defence of Cape Coast Castle; the survivors of these were subsequently transferred to the Sierra Leone Command, and, with several drafts of commuted punishment men from England, formed into the Royal African Colonial Corps, which thus again consisted of Europeans of the most degraded class. Death, however, thinned the ranks with such rapidity that an attempt had to be made, in 1825, to keep up the force by voluntary enlistment; above 100 recruits were in this manner raised and sent from Britain, but though their character and conduct appear to have been unexceptionable, they soon shared the same fate as their depraved comrades. The impossibility of maintaining white troops in such a climate being thus demonstrated, the garrison has, since the end of 1829, consisted entirely of blacks, with the exception of a few European serjeants.

The *Barracks and Hospitals*, prior to 1836, appear to have been infamous. What must have been the horror, how natural the mortality, during a Sierra Leone wet season, when even many of the officers could obtain no better accommodation than rude huts, incapable of affording shelter from the inclemency of the rains, and in which it was not uncommon to find the husband, wife, and children lying in the last extremity of fever in the same room.

But in 1826, good barracks were built at Sierra Leone, on the summit of a conical hill 400 feet high, nearly in the centre of the elevated range which surrounds Free Town. The barracks at the Gambia is not so good, being near the lowest ground; and that at M'Carthy's Island is worse. The *rations* are now unexceptionable, but, previously to 1827, that was far from the case.

Mortality.—From a table furnished by Major Tulloch, it appears that, during so long a period as 18 years, the admissions have averaged 2,978, and the deaths 483 per thousand of the strength; in other words, every soldier was thrice under medical treatment, and nearly half the force perished annually; indeed, in 1825 and again in 1826, when the mortality was at its height, three-fourths of the force were cut off. Yet this estimate excludes the deaths from accidents, violence, &c.

A considerable portion of the deaths in 1825 and 1826 took place at the Gambia, which proved the grave of almost every European sent there. Had the mortality of each station been kept distinct, that of the European troops at Sierra Leone would not probably have exceeded 350 per thousand, or rather more than a third of the garrison annually.

There can be no doubt that the casualties of 1825 and 1826 raised the mortality in this command considerably above the usual average, but in almost every year it has proved exceedingly inimical to Europeans. From information supplied by the Report of the Sierra Leone Commissioners, it appears that during the nine years antecedent to 1819, the mortality of the white troops on this coast averaged about a fourth part of their number annually, and even so far back as 1792, we find that the loss of the soldiers and white colonists sent out by the Sierra Leone Company was in the same proportion.

However much the vice and intemperance, not only of the troops but of the other classes of the white population, may have aggravated the mortality, a more regulated life and purer morals brought no safety with them. For, among the missionaries, we find that:—

Of 89 who arrived between March 1804 and August 1825,	
all men in the prime of life, there died	54
Returned to England in bad health	14
.. .. in good health	7
Remained on the coast	14

Total 89

From a table given by Major Tulloch, it is evident that the principal source of sickness and mortality has been fever, by which every white soldier has on an average been attacked once in nine months, and more than two-fifths of the force have been cut off annually. The remittent type has been

both the most prevalent, and infinitely the most fatal, out of 2,600 admissions, 1,601 being from this, and 739 deaths out of 756.

The mortality, not including the most unhealthy years, would appear to have been about 17 per cent. annually. But in common with all tropical climates, that of Western Africa exhibits remarkable variations in salubrity in different years, without any obvious cause to induce such a change; between 1830 and 1836, for instance, the Colony enjoyed a succession of such healthy years as to induce the supposition that the causes which had rendered it so long a terror to Europeans were never likely to come again into operation; but the fatal epidemics of 1837 and 1838 dispelled this pleasing delusion, and showed how little reliance could be placed on what were merely the vicissitudes characteristic of a treacherous climate.

"So generally prevalent is remittent fever, either in its aggravated or milder forms, on this coast, that till of late years scarcely any European ever passed twelve months without an attack; the most regular habits and the best constitution afforded no protection, nor did a residence on the coast, however long, secure any immunity. It was observed in 1825, and a few of the following years, that the appearance of ulcers, which were very common among those soldiers who indulged in intemperance, seemed to act as a safeguard against remittent fever so long as they continued open and discharged freely, but whenever they ceased to do so, that disease assailed the patient and generally proved fatal. More recently, in 1837, it was also observed that in many of the worst cases, an exudation of blood took place from the tongue, gums, nose, and anus, and, that whenever leeches were applied, the tendency to hæmorrhage was so great as to render it almost impossible to stop the effusion. Except in these respects there appears to have been little difference in the character of the disease from that which generally marks the course of yellow fever of the worst type in other Colonies. On this point, it may be proper, however, to remark, that, between 1824 and 1829, the black vomit is not mentioned in any of the Reports as one of the characteristics of the disease. This may perhaps induce a doubt in the minds of those who attach importance to that symptom, as to whether the disease in these years was genuine yellow fever, or merely the endemial remittent of the country; but as the latter is comparatively of a mild character, the cases could scarcely have been of that type, when in general one-half, and in some instances three-fourths, perished, of all those attacked." 9.

The disease, in 1835 and 1836, was more fatal at the Gambia, where three-fourths of those attacked died, than at Sierra Leone, where the deaths were about one-half. And it has been already observed that it has fluctuated remarkably in different years, both in prevalence and severity. In 1830 and the six subsequent years, it almost disappeared, while, in 1837 and 1838, it prevailed with all its ancient virulence. The following statements prove how little we know of the real causes which light up this pestilence into activity.

"This disease has, in most years, appeared and raged with the greatest violence during the height of the rainy season, when vegetation was most vigorous and healthy, and the low grounds, being completely flooded, were in the state supposed least favourable to the extrication of miasma; it has also been observed to diminish both in prevalence and severity as the rains moderated and the marshes began to dry, but to this rule we have to record several exceptions;—for instance, in 1823, 1829, 1837, and 1838, the disease appeared in its most malignant form in the months of February and March, during what had generally been termed the dry or healthy season, and on each of these occasions its

violence declined as the rainy season advanced, and the earth became completely saturated with moisture, being directly the reverse of what had been observed in other years.

In most instances, too, the prevalence and fatal character of the disease have been commensurate with the quantity of rain; but here again the exceptions are so numerous as to strike completely at the root of all theories tending to establish that the former is a necessary result of the latter, for in 1812, 1823, and 1829, less rain fell than usual, yet fever was exceedingly prevalent, and though from 1830 to 1836 the Colony was almost free from fever, yet, with the exception of 1832, the quantity of rain in each year was about the usual average.

Attempts have also been made to connect the appearance of this disease with the circumstance of the rains commencing earlier or later, or being heavier or lighter at the commencement than usual, but without any satisfactory result, the exceptions being always too numerous to admit of any positive conclusions. The range of temperature, the fluctuations of the barometer, the direction and prevalence of the winds, have also been carefully observed, but do not seem in any way connected with it. The latest, as well as the earliest observations, all tend to show that the circumstances which call it into operation at one season or in one year more than another, have hitherto received no satisfactory explanation. In 1823, when the fever broke out during what was deemed the healthy season, and when none of the usual theories would account for its appearance, it was supposed by some of the medical officers to have originated in noxious miasma, wafted from the Bulam shore; but, so far as could be learnt, there was nothing in the character of that shore more likely to have produced the disease in 1823, than in other years which were healthy. And its subsequent appearance in 1837 and 1838 at the same season, when there was nothing to induce such a supposition as to its origin, certainly appears to indicate that there could have been but little foundation for this theory."

The elevated spots are not exempt from the fever. The barrack, though at the height of 400 feet, has frequently been the scene of greater mortality than the lowest situations in the town; and recently, when a body of seamen was removed to the village of Wilberforce, at an elevation of 500 feet, with the view of keeping them free from fever, they suffered even to a greater extent than on board the shipping in the harbour.

The common continued fever being ten times more fatal than in other colonies, probably partook of the remittent type.

Diseases of the Lungs.—The climate of this command seems rather favourable to diseases of this class, the admissions, compared with those which occur among an equal number of troops in the United Kingdom, being as 56 to 148, and the deaths as 4·9 to 7·7. The same feature was manifest in the diseases of the black troops, who are very prone to pulmonic affections in other colonies. The most marked exemption in this class is from inflammation of the lungs, by which only 8 per thousand have been attacked annually, though the usual proportion in most other colonies is from 30 to 40 per thousand. Consumption has also been comparatively rare. But really it is hard to conceive how a man is to die of consumption in these parts—he literally has not time for it.

Catarrhal affections, particularly those of an acute nature, were also extremely rare during the period when these white troops were employed; but of late an epidemic, resembling influenza, has prevailed annually in the

command. It pervades simultaneously very extensive districts; generally commencing about the height of the dry season, when a keen, parching, easterly wind, termed the harmattan, blows. The native inhabitants have suffered more than the troops, but it has rarely proved serious or fatal, except to aged persons, or those debilitated by disease.

It is certainly singular how these epidemic catarrhs would appear to have increased, of late years, throughout the world. Abstractedly speaking, there is nothing to excite surprise in the occurrence of catarrhal affections in a climate like that of Sierra Leone. It is the increase of them that is odd.

Diseases of the Liver.—This class of diseases has been nearly four times more prevalent and fatal among the white troops in the command, than in any other colony of which the statistical details have yet been investigated.

Diseases of the Stomach and Bowels.—A table shews that more than half the troops have been under treatment, and that the deaths from these diseases have averaged 41 per thousand of the force annually. As usual, dysentery was the principal source of mortality, and of so aggravated a character were the acute cases, that nearly two-fifths of them proved fatal, a degree of intensity never surpassed elsewhere. There was a marked diminution of mortality from this cause, after the alteration of rations, and the liberal issue of fresh meat. The deaths were reduced to a tenth of their former number. Similar results have attended the recent increase in the issue of fresh meat to the troops in the West Indies, a circumstance which seems to warrant the adoption of a similar remedy in other colonies, whenever there is reason to believe that the character of these diseases has been influenced by a similar cause.

Diseases of the Brain.—This class of diseases has proved considerably more fatal than in any of the other Colonies, and, with the single exception of the Windward and Leeward Command, has also been more prevalent. Nor need we wonder at this when we consider the character and habits of the men.

Dropsies.—As these diseases are so often induced by attacks of remittent or intermittent fever, they have been much more prevalent and fatal than in other Commands.

Venereal Affections.—The troops at Sierra Leone enjoy a similar exemption to those in the Windward and Leeward Command, though not to so great an extent. This is principally manifested in syphilitic affections, of which only four primary cases occurred among the whites, and but three among the black troops in the whole course of eighteen years; yet no sanatory regulations appear to have been adopted.

Abscesses and Ulcers—extremely prevalent. Many were of a very serious nature, being apt to slough, and frequently causing such loss of substance as to create a permanent disability, and in some instances to render amputation necessary.

Diseased Spleen was exceedingly rife.

Corporal Punishment was both common and carried to great lengths. "In seven instances death ensued before the patient came out of hospital. Six of these, however, occurred at the Gambia, where, as the majority of each detachment generally perished within three months, it is probable their fate may only have been accelerated—not induced—by the punishment." What a comment upon climate! How demoralising is pestilence! The Reporter next examines the insalubrity of the different stations in detail. He is anxious to let Sierra Leone have only the responsibility of its own deaths—to give, in fact, the devil his due. First, then, of—

Gambia.—Could any idea bordering on the ludicrous attach to so melancholy a subject, the manner in which successive relays of troops were *dispatched* to or in this station would give birth to it. We know not how a sad tale of disease and death could be told more tersely and more affectingly than in the following statistic fashion.

The first detachment of white troops arrived in the latter end of May 1825, just as the rains commenced. It consisted of 108 men, being all for whom accommodation could be procured. Between that date and the 21st September of the same year, the casualties among them were as follows:

Died of remittent fever	74
Of other diseases.	13
<hr/>	
Total died	87
Remained alive at the end of 4 months ..	21

Owing to the want of sufficient accommodation on shore, another detachment of about 91 men was, during this period, kept at sea on board the *Surrey* transport, and while there, did not lose a man; but when, towards the end of September, room was provided for them in the barrack, by the death of four-fifths of their comrades, they were landed, and made up the force to about 112, of whom, between that period and the 21st December,

There died of fever	61
Of other diseases, including 6 from fever } following punishment	12
<hr/>	
Total died	73
Remained alive on 21st December	39

The force having now been reduced by deaths to 39, most of whom were in the last stage of disease, another body of about 200 Europeans was sent to supply their place, and that too, as before, at the commencement of the rainy season. It does not appear whether they were all landed at once, or a portion of them kept on shipboard, as on the previous occasion, for want of accommodation; but ere three months had elapsed, half the number were in their graves. The deaths reported from 21st June to 21st September of that year, were—

Of fever.	85
Other causes.	13
<hr/>	
Total in 3 months ..	98

The strength appears to have been by this time reduced to 108, of whom there died from the 21st September to 21st December—

Of fever.	14
Of other diseases.	4
Total.	18

Thirty-three of the survivors who were suffering under chronic affections of the liver, spleen, and other viscera, were then removed to head-quarters; of the remainder only one died, between January and July of the following year, when all the white troops were withdrawn from the station.

During the whole of this dreadful mortality, a detachment of from 40 to 50 black soldiers of the 2nd West India Regiment only lost one man, and had seldom any in hospital.

Fever accounts for all. Only about a fifth of those attacked came out of hospital alive. And those who did recover had a constitution shattered for life. The men were, naturally, reckless. Constant intoxication drowned the sense of danger, and they were drunk to-day, for to-morrow they knew that they would die. Perhaps reason was more on their side than it generally is in such a case. For observe what happened at—

The Isles de Loss.—Deceived by the supposed advantages of its situation, General Turner selected the centre island as a suitable station for a detachment of recruits voluntarily enlisted at Chatham, whom it was deemed advisable to separate from the commuted punishment men, to prevent their initiation into habits of intemperance and debauchery. They are described as being generally men of good character, exemplary conduct, and with little inclination to inebriety, in which, however, had they been ever so much inclined, they had no opportunity of indulging, as spirits could not be procured in the island.

The detachment arrived at the Isles de Loss on the 23rd of February, 1825, and consisted of 103 men. In 18 months, 62 were dead, and 21 were invalided to England. There remained then, of the original force 20, who were withdrawn at the end of the year, scarcely any being fit for duty! This, we may presume, will be the last experiment on the possibility of keeping white troops alive on the Western Coast of Africa.

It appears that, in 1825 and 1826, the relative mortality of each station was as follows:

Sierra Leone	650	per thousand of force employed,
Isle de Loss	600	" "
Gambia.	1,500	" "

and making allowance for the mortality at the subordinate stations, that at Sierra Leone alone, taken on the average of the whole 18 years, will be reduced to about one-third annually of the white troops employed.

Black Troops.—These have generally been recruited from the slaves captured by our cruisers, and liberated at Sierra Leone. Yet, on his native continent, supplied with all the necessities of life, the negro soldier has not escaped disease. The mortality during the last 18 years has averaged about 30 per thousand exclusive of sudden and accidental deaths not stated in the

medical returns, and which would probably have increased the ratio to 32 per thousand annually. At the lowest computation, it has been twice, and in some instances more than thrice as high as among other troops serving in their native country, though from the recent formation of the African Corps most of them are considerably under the average age of soldiers. The ratio will be found exactly the same as among the black troops employed in Jamaica and Honduras; and though less than in the Bahamas and Windward and Leeward Command, in the proportion of 32 to 41, yet as a very large proportion of the force there was of advanced ages, while in the African corps scarcely any soldier exceeded 25, the former ratio may be held to correspond very nearly with the latter; consequently, on his own native coast, even with all the advantages enjoyed by the British soldier, the negro exhibits a liability to mortality for which it is extremely difficult to account. Perhaps his previous treatment in the slaver had deteriorated his constitution, yet, making every allowance for this, there is abundant evidence that the climate is unfavourable even to the negro race.

In the years 1818 and 1819, as previously stated, 1,222 black soldiers were discharged at Sierra Leone, not in consequence of age and infirmities, but owing to the reduction of their corps. They are described as having been mostly in the prime of life, and of quiet, sober, industrious habits; each received a pension of from 6d. to 8d. per day, which, with an allotment of land and the produce of their daily labour, placed them in comparative affluence, yet, under all these favourable circumstances, at the census of April 1826 they were reduced by death to 949, making a total mortality of 273 in eight years, or in the ratio of 31 per thousand annually, which corresponds to the mortality among pensioners in this country about the age of 55, whereas these men could not have averaged above 40. Even among the negro colonists the same mortality obtains, and we suppose that the climate must be regarded as a villainous one to the whole human race. It is not however, from fever that the negro soldier suffers: from this the attacks have been fewer, and the deaths have not materially exceeded the proportion among an equal number of white troops in the United Kingdom or other temperate climates. The black troops suffer much more from fever in the West Indies. Small-pox has proved very destructive to them. Dracunculus infests them greatly. They do not suffer from diseases of the lungs half so much as in other colonies.

b. Cape Coast Command.

In this Command were comprised the stations along what is termed the Gold Coast, extending from Dixcove to Accra, a distance of 150 miles. Since the end of 1828, however, when Fernando Po was selected as a settlement, none of them have been garrisoned by British troops. The settlements have little ground attached to them beyond the forts and gun-shot range.

Cape Coast Castle, the principal station, lies in Lat. 5° 6' N. Long. 1° 10' W. nearly 1000 miles to the East and South of Sierra Leone, and is built on a rock about 50 feet high, jutting into the sea, so that its walls are washed by the surf which rolls impetuously along the coast, and adds to the

natural moistness of the atmosphere. The fort or castle is of a quadrangular shape, with bastions at each angle; the barracks are described as comfortable, well ventilated, and affording accommodation for 16 officers and 200 men; but having been occupied in 1825 and 1826 by considerably more than that number, they were extremely crowded. The castle is a place of little strength, the walls being out of repair, and commanded in every direction by the adjacent heights. The water for the garrison is obtained from tanks, in which the rain from the buildings is collected.

This part of the coast is not mountainous, but, at the distance of a quarter of a mile from the shore, a succession of small hills rise to the height of 150 or 200 feet, which, with the intervening valleys, are covered with forest trees and luxuriant vegetation throughout the year. The soil on the heights is of a siliceous nature, and in the valleys consists of a rich alluvial deposit. There is a salt pond about a mile distant, but no swamps or marshes exist in the vicinity, nor any river nearer than 5 or 6 miles.

Immediately under the walls of the fort is a native town containing about 5000 inhabitants; it is very much crowded, badly built, and, from its extreme filthiness, is supposed in some degree to have contributed to the unhealthiness of the garrison.

Of Dixcove and Annamaboe, we need not speak.

Accra, sixty miles east of Cape Coast Castle. In its vicinity, the country is open and level, free from bush or underwood to a considerable distance from the sea, and presenting the appearance of an extensive park. A small and rudely constructed fort protects the settlement, to which a detachment was generally furnished from Cape Coast Castle. The soil in the vicinity is sandy and mixed with vegetable mould; there are no swamps, no river nearer than eight miles, nor any of those noxious agencies which are generally supposed to contribute to insalubrity; yet, so fatal did the station prove, that in 1827 it became necessary to withdraw the troops and leave it in possession of one of the resident merchants, with local military rank, who now hires a few natives for its defence.

The *climate* of this coast is similar to that of Sierra Leone, extreme humidity being its principal characteristic.

While the African Company held the forts in this Command, they maintained a force of 120 natives for their protection, under European officers, who also followed the occupation of traders. When the British government took possession, these troops were re-enlisted into the service, and increased to 200 by native recruits. Owing to the Ashantee war, in 1823, a part of the Royal African Corps, formerly disbanded at the Cape of Good Hope, was re-embodied and augmented by drafts of "commuted-punishment men" from Europe, so that here, as at Sierra Leone, the greater portion of the white troops consisted of the most degraded class of soldiers. So fatal did the climate prove to them, that in the end of 1826 the few who survived were withdrawn, and their place supplied by two companies of natives. On the abandonment of Accra and Annamaboe, these were reduced to one, which, in October 1828, was transferred to Fernando Po, and no regular troops have since been employed on the coast. The rations of the white troops comprised no fresh meat, and few vegetables.

On the average of 1823, 4, 5, 6, two-thirds of the white troops died

annually, and so great was the mortality in 1824, that the deaths nearly equalled the mean strength of the garrison. It has on this account been necessary to enumerate the strength in each quarter, as the troops were cut off with such rapidity, that few lived to complete one year in the Command. The following is a pithy history of some of the first detachments, in a medical report dated December, 1824.

" Out of the first detachment of European troops, which arrived in April 1822, under the command of Captain Donald, only *one* survives. Out of the second detachment of 129, which arrived in October 1823, under the command of Captain L'Estrange, only a few remain, and their constitutions are so destroyed by repeated attacks of intermittent and remittent fevers with dysentery, that their existence cannot be long. Out of a third detachment of 131 disembarked here on the 12th of March 1824, under the command of Lieutenant M'Combie, from the Cape of Good Hope, the majority died, a few months after landing, from remittent fever and dysentery depending on diseased liver. Out of the fourth detachment, which arrived on the 20th March last in the brig Anne from England, consisting of 33 men (chiefly non-commissioned officers) under the command of Lieutenant Mollan, only *six* are now alive. Out of the fifth detachment, which arrived from England in H. M. ship Thetis on the 4th of July last, and consisting of 101 men, 45 have already died. Out of the sixth detachment of 11 Artillerymen, who arrived here on the 17th of July 1824, from England, only one is dead, but I apprehend that ere long most of them will be on the sick list."

It was just the same at Accra as elsewhere, and with civilians as the soldiery. Out of 21 merchants who arrived in 1822, four only survived in 1825; out of 77 officers who arrived at various times between 1822 and 1827, no less than 37 died before quitting the Command; while of 42 women and 67 children landed with a detachment in October 1823, 29 women and 41 children perished in less than 15 months.

On referring to earlier years, before the coast was garrisoned by our troops, we find that of 40 Europeans in the service of the African Company, 15 died and 4 returned to England in bad health, in the years 1819, 1820, and 1821; and according to some Returns extending back to the year 1812, the loss of life appears to have been much the same, so that, in the healthiest years and under the most favourable circumstances, the mortality may be rated at from 12 to 13 per cent. annually.

Fever was much the same as in the Sierra Leone Command—diseases of the bowels much more fatal. The salt provisions must have contributed to this.

Fernando Po.—This island was selected as a military station from its supposed salubrity, and the facility it afforded for the protection of trade, and the location of slaves captured by our cruisers. It lies in the Bight of Biafra, 500 miles to the East of Cape Coast Castle, and separated, by a strait 20 miles in breadth, from the nearest point of the African Continent. It is about 120 miles in circumference, and, like that part of the mainland adjacent, is exceedingly mountainous, Clarence Peak, the most elevated point, attaining the height of several thousand feet. The southern extremity is also intersected by several steep mountains, varying from 1000 to 3000 feet, which, with the intervening valleys, are covered with dense forests of large and valuable timber, and watered by numerous rivulets.

Clarence Town, the principal settlement, lies in lat. $3^{\circ} 53' N.$, long. $7^{\circ} 40' E.$ and is built close to the sea upon an elevated plain from 100 to 200 feet in height, embracing two small peninsulas, Point William and Point Adelaide, with a semi-circular space extending about a mile in length, and forming a cove well adapted for shipping. All the ground in the immediate vicinity is covered with forest trees and jungle, except to the extent of about six square miles, which was partially cleared on the formation of the settlement. The soil, which is generally argillaceous, resting on a bed of free-stone, gives proofs of abundant fertility when cultivated. The water, both of spring and brook, is of the best quality, and there are no marshes in the vicinity, the hilly nature of the ground not admitting of their formation.

The seasons, &c. are much as at the other stations on the coast. The land breeze is deficient. The only information obtained is that from Captain Vidall, R.N. given before the Parliamentary Commissioners. Of 40 European mechanics, sent out under his superintendence to form the settlement in 1827 and 1828, four died in the course of a few months. In 1830 the number of whites, including officers, was reduced to 16 or 18. Colonel Edward Nicholls then arrived, bringing with him 31 Europeans, principally mechanics, of whom 19 died in that year, besides 4 out of 12 shipwrights who came during the previous year to the settlement.

Fever and the worst ulcers prevail. In 1834, the detachment of black troops was withdrawn, and the island is no longer occupied as a military station.

On the whole, it seems that, 1,685 troops went to Western Africa. Of these there died, 1,298, and there were invalided the remainder, viz. 387!

Deductions from the preceding Report.—These occupy a section.

Major Tulloch observes, that the opportunities for investigating the causes of remittent fever would seem to be most abundant, and most likely to be productive of results on the Western Coast of Africa, while the zeal with which that investigation was commenced, and has been carried on also, seemed to promise success. Yet all who have studied the subject have confessed both their ignorance and disappointment.

"The hypothesis that this fever originates from the miasma of marshes in the immediate vicinity of the station, as elsewhere it has been supposed to do, is directly opposed to the fact of the Isles de Loss, Accra, and the peninsula of Sierra Leone itself, being so subject to it, though all are, in a certain degree, remote from the operation of any such agency. If it be referred to similar exhalations wafted to the distance of several miles, how is its prevalence to be accounted for at Fernando Po, a mountainous region and bordering on a mainland still more so, and where, so far as can be ascertained, no such agency is in operation? Instances of the disease having raged with the same violence on the rocky Isles de Loss and the sandy wastes of Senegal as in those parts of the coast where vegetation is most dense, preclude the likelihood of it originating in a superabundance of that agency. In every description of situation along the coast has this scourge of Europeans been found to prevail. The low swampy Gambia, the barren Isles de Loss, the beautifully diversified features of Sierra Leone, the open and park-like territory around Accra, the low jungle-covered hills of Cape Coast Castle, and the rugged mountainous island of Fernando Po, however different in aspect, have all exhibited the same remarkable uniformity in giving birth to the disease.

So long as the fever continued to make its appearance during the rainy season, excessive moisture was deemed one of the principal causes, but that theory has been abandoned since it has, on three or four occasions, appeared and raged with equal violence in the middle of the dry season. If we attempt to connect it with temperature, the range of the thermometer offers equally contradictory results, the disease having originated and prevailed nearly as often when that was at the minimum as when at the maximum. Variations in atmospheric pressure afford no clue whatever to the solution of the difficulty, for here, as in all tropical climates, the fluctuations of the barometer are exceedingly slight. No definite connection has ever been traced between the prevalence of any particular wind and the outbreak of the disease; the breeze blows over the same district in the healthy as in the unhealthy season. Besides, it seems entirely to negative the supposition that any of these can be more, perhaps, than mere accessories, when we find, from 1830 to 1836, the colony of Sierra Leone remarkably free from fever without any perceptible change in these respects." 27.

The composition of the atmosphere, during the prevalence of yellow fever in the command has not been closely examined. But much cannot be expected from any examination of the kind, for our readers know how signally it has failed elsewhere. The following observations are as painful as just.

" Though the primary cause of a disease which has created such mortality among the white troops on this coast may remain for ever involved in the same doubt and uncertainty as at present, a useful lesson may be learnt from the preceding details, as to the inexpediency of ever forming commuted-punishment men into corps for service in the Colonies. It is obvious that if such a corps is stationed in a healthy climate, banishment to it can scarcely be looked on as a punishment; but if sent to one exceedingly unhealthy, then the natural evils of climate are aggravated by despair, and that intemperance which despair too generally induces. In addition to the dread of sickness with which the soldier is impressed on his arrival, there is the certainty that, under no circumstances, will he ever be permitted to return to his native land, and the excesses to which this gave rise during the period when mortality was at its height in Western Africa are stated to have been such as to baffle description, and could only be expected from men absolutely weary of life, and driven by despair to the verge of madness. Setting all restraints at defiance, regardless of the warnings of their medical attendants, or the fate which a similar course of dissipation had accelerated in their comrades, every energy was directed to procuring the means of that intoxication which they vainly looked to as the best resource against care, and in search of which they fearlessly encountered the tropical rays by day, and the chilling dews by night. Punishment was of no avail; that of death itself was derided by men who knew that in such a climate their hours were already numbered; and to corporal punishment they had become so habituated that it lost its terrors, though it must have been inflicted with no sparing hand, when 12 deaths are recorded from it within a year.

Even had their crimes been such as to involve the utmost penalty of the law, banishment to such a climate was obviously far from a commutation of punishment; not a twentieth part of the criminals sentenced to death in the United Kingdom about that period were ever executed, the rest were sent to a climate in which their lives were likely to be prolonged to the utmost limit; but out of the same number of military culprits sent to the coast of Africa one-half generally died during the first quarter, and the average duration of life among the others did not exceed 15 months. Yet many of the crimes which led them to this coast were by no means of a heinous nature, either in a civil or military point of view, as it too often happened that those who wanted fortitude to bear

a present punishment, though comparatively trifling, were glad to exchange it for one deferred, but of the nature of which they were ignorant." 27.

The reformation of the offender, was, of course, out of the question—the deterring from crime equally hopeless, for none returned to tell the tale to comrades, or to such as were likely to be culprits. To make matters worse, it was impossible to procure trust-worthy non-commissioned officers, so that those who should have checked, were often found promoting, insubordination. We cannot be surprised if, besides the frightful mortality that ensued among the unhappy wretches themselves, the lives and fortunes of the colonists were placed in jeopardy by their violence and their despair. Two conspiracies had well nigh proved successful. It is to be hoped, then, that the plan of keeping up a penal corps will be abandoned.

II. ON THE SICKNESS AND MORTALITY AMONG TROOPS SERVING IN THE ISLAND OF ST. HELENA.

This "Atlantic Island" is situated between 15° and 16° of South Latitude, and 5° and 6° of West Longitude. It is about $10\frac{1}{2}$ miles in length, $6\frac{1}{2}$ in breadth, and has a superficial extent of above 30,000 acres. It is divided by a lofty chain of hills running in a curved direction from east to west, with several ridges branching off towards the north and south, and forming valleys of various extent, but all extremely contracted. At the entrance of one of these valleys, on the North West or Leeward side of the island, is James Town, the capital.

On each side of this valley the ground rises with great abruptness into two broken rugged eminences of considerable elevation: that on the west, termed Ladder Hill, is surmounted at the height of 600 feet by a battery, the ascent to which is so steep that it has sometimes to be made by a step ladder; the other is also of a similar precipitous character, consequently but little vegetation, except patches of furze and stunted shrubs, can find root, except towards the bottom of the valley.

The country becomes less wild and rugged, however, and the luxuriance of vegetation increases in proportion to the distance from the sea; most of the uplands are covered with verdure, many spots in the interior under rich cultivation, and at an elevation of nearly 1700 feet are two level tracts, called Longwood and Francis plains, the former of which is upwards of 1500 acres in extent. That part of the island is well-wooded, and affords good pasture, a few dwarf trees and shrubs are also scattered over the summits and sides of the high grounds in the interior, but, generally speaking, vegetation is scanty. Various small streams intersect the island, but there is no marshy or swampy ground.

The south-east trade wind affords a steady breeze, which, in these latitudes, is rarely disturbed by storms and gales, and brings with it a canopy of clouds sufficient to afford shelter from the vertical rays and to admit of labour and exercise being carried on with impunity, even during the heat of the day.

The temperature is found to vary very materially, according to the nature of the locality and different degrees of elevation. In James Valley, for instance, where the principal part of the troops are quartered, and where the reflection from the surrounding heights tends to augment the natural heat,

the thermometer during the summer months sometimes rises as high as 85° and is generally about 80° , but at Plantation house, which enjoys an elevation of 1783 feet, the average at that season is much the same as in Great Britain. Owing, however, to the nature of the localities, a considerable variation of temperature may be experienced in a few minutes, the soldier, for instance, who ascends from James Town to Ladder Hill, exchanges the heat of the tropics for that of a temperate region. And in regard to moisture, the difference between the high and low grounds is still more remarkable. In James Valley the climate is very dry; in the upper regions of the interior it is remarkably the reverse; indeed, on the summits of the hills scarcely a day ever passes without rain. Thus, though it rained on 178 days of that year, at Plantation House, it only rained on 46 days at James Town, and the quantity which fell at the former station, was more than five times greater than at the latter. Electrical phenomena are said to be exceedingly rare.

It could scarcely have been anticipated that under the tropics, a situation could be found where the mortality among both the white and black population did not, on the average of a long series of years, exceed that of their respective native countries. There is no doubt, however, that this is the case in St. Helena. Major Tulloch presents an abstract of the deaths among the civil population, between October 1815 and September 1837, from which it appears that the annual mortality has averaged 1 in $48\frac{1}{2}$, even including the class termed strangers, many of whom were seamen landed from vessels in the last stage of disease: in the United Kingdom it averages about 1 in $47\frac{1}{2}$ of the population; consequently St. Helena must be healthier than Britain.

This is the more remarkable as a large proportion of the population are of the Negro race, who in general suffer to a great extent when transported from their native country; here, however, they are found to keep up, and even to add to their numbers, for though no importation has been permitted since 1792, they increased within the following 13 years, from 1512 to 1560, a feature which has never been observed in any other British colony.

There have been only two severe epidemics since the island's colonization. One occurred in 1718, another of measles, in 1807.

Prior to 1815, when this island was selected for the residence of the Ex-Emperor Napoleon, the garrison consisted of four companies of artillery, and a corps of infantry, raised expressly for the purpose, with two companies of invalids, all white troops, in the pay of the East India Company. A reinforcement of regular troops arrived with Napoleon, which was withdrawn shortly after his decease, and the island was again garrisoned solely by those of the East India Company till 1836, when, having been ceded to the crown, the colonial force was disbanded and replaced by troops of the line. During the period of the Company's occupancy, the force seems to have averaged about 800, exclusive of officers, while the deaths averaged from 15 to 16 annually, consequently the mortality must have been under 2 per cent., even including that of the invalid establishment, consisting of about 100 soldiers advanced in life; it is probable, therefore, that the mortality of the effective part of the force did not exceed the usual ratio in the United Kingdom.

After describing the barracks, Major Tulloch alludes to the bad rations.

which were issued from 1816 to 1822, fresh provisions being seldom served out, except to such soldiers as were in hospital. The daily diet consisted of a pound of salt beef or pork, and a pound of bread, with a pint of Cape wine, to which the soldier added such vegetables as he could afford from his pay, but, owing to the high price, these could never be procured in sufficient quantity to neutralize the constant use of salt-meat diet. The same rations were issued for some time after the arrival of the 91st, and it was not till nearly a third part of that corps had been in hospital and several deaths had occurred from diseases of the bowels, that measures were taken for improving them. Now there are allowed 2lbs. of fresh meat in the week.

From a table it would appear that among the King's troops, from the years 1816 to 1837, inclusive, the mortality averaged 35 per thousand annually.

The diseases from which the chief mortality has sprung have been, in order, Diseases of the Stomach and Bowels, Diseases of the Liver, Diseases of the Lungs, and Fevers.

Diseases of the Stomach and Bowels.—"More than a third," says Major Tulloch, "of the admissions and nearly two-thirds of all the deaths among the troops, have been from this class of diseases. Dysentery is the prevailing form, and is even more severe than in the West Indies; yet in vain do we look for any peculiarity either in the climate or the locality to account for it;—the heat, owing to a cloudy sky and constant breeze, is far from oppressive, the range of the thermometer is extremely limited, and except occasionally in passing from the narrow and confined valleys to the higher and more exposed parts of the island, sudden transitions of temperature are comparatively rare; the moisture, in the low grounds at least, where the troops are principally stationed, does not appear to have exceeded the usual average in similar latitudes, and there are neither marshes, forests, nor any excessive vegetation to which the most remote suspicion can attach of having operated unfavourably in this respect. Had these diseases been principally confined to the 66th Regiment, their prevalence might perhaps have been attributed to a large proportion of that corps having acquired a predisposition to them by previous service in the East Indies, but the 20th Regiment, though direct from Europe, lost precisely the same number, and had nearly twice as many cases in hospital; yet the East India Company's troops were almost entirely exempt, indeed, in some years, the mortality among them by all diseases together, was not higher than among the King's troops by diseases of the bowels alone.

It is remarkable, too, that the population of the island generally, appear to have enjoyed a similar exemption, for, as will be seen by reference to Abstract No. II. of Appendix, of 552 deaths, only 47, or a twelfth part, were from diseases of the bowels, while of 33,501 deaths among the inhabitants of Malta, 4920, or nearly a seventh part, arose from the same cause. Thus, so far as can be estimated from the years over which these observations respectively extend, the inhabitants of St. Helena suffer scarcely half as much from these diseases as the population of Malta, indeed, they do not appear to be more prevalent than in England, though as the classification in the Registrar-General's Returns differs from that which we have adopted, it is impossible to draw the comparison so clearly.

The connexion frequently found to subsist between hepatic derangement and affections of the bowels, might perhaps in some instances have given rise to the latter among the troops, but in that case, as indeed in every other in which their prevalence or fatal character is in any way attributable to climate, the same feature should have been manifested among the officers; whereas, of about 50

belonging to the two corps in garrison, from 1816 to 1822, the number under treatment for diseases of this class did not average above three annually, being scarcely a fifth of the proportion among the troops, and not a single officer died or was even seriously affected by them. The remarkable liability of the soldiers as compared with the officers, cannot here be attributed to the intemperance so common at other tropical stations, for it is stated by the medical officers, that no spirituous liquors were at that time allowed to be landed in the colony.

Neither can this liability be attributed in any material degree to the defective accommodation of the force, nor to the nature of the duties it had to perform during the residence of Napoleon, for in 1836, when the island was given up to the Crown, and when no such causes were in operation, these diseases began to manifest themselves shortly after the arrival of the troops, commencing with obstinate visceral obstructions which, unless removed by the use of medicine and a mild diet, ultimately terminated in severe dysentery. At this time also no such disease prevailed among the civil inhabitants, or the soldiers of the colonial corps which had been disbanded, nor were any cases of it observed among the officers.

In consequence of repeated representations to which the frequency of these diseases gave rise, a Board of Medical Officers was, in October 1836, directed to investigate the subject, who, after carefully examining into all the circumstances connected therewith, came to the conclusion that the health of the troops had manifestly been impaired by the constant use of salt rations; that in several, particularly those of a scrofulous diathesis, dysentery had been induced, and that when such persons were even fortunate enough to recover from a first attack, they generally experienced a recurrence of the symptoms immediately on returning to a salt-meat diet. Two days' fresh provisions per week were in consequence ordered for the troops, with the privilege of exchanging a portion of their salt meat for fish or vegetables. The beneficial effect of this alteration was shown by the cases of visceral obstructions being reduced to half their previous amount in the course of the following year, and now they are said to be comparatively rare."

It is only fair, then, to exonerate a climate which spared others as singularly as the soldier was attacked. And since, upon the one hand, the soldier was circumstanced differently from other classes in point of diet, and ceased to be affected in so marked a way by dysentery when that diet was changed, it is next to impossible to attribute to anything but diet the complaint he suffered under. This is confirmed still further, by what happened to the East India Company's regiments. They did not suffer, like the King's, from dysentery, a circumstance accounted for by most of them having formed connexions in the island, through whose aid they were in the habit of raising pigs, poultry, and vegetables, to improve their diet, which troops of the Crown, whose residence is always temporary and uncertain, had no similar opportunities of doing. The Company's troops appear also to have been in the habit of exchanging a large portion of their salt meat for fish and vegetables, and to have enjoyed the advantage of obtaining from the Government stores, tea, sugar flour, &c., considerably below the market price.

Diseases of the Liver.—Like that of Western Africa the climate of this island appears to exert an unfavourable influence on hepatic affections. They occur even more frequently and of a graver character than in the West Indies, though the temperature is lower and more uniform, and though other diseases are more rare.

Their influence in this island, compared with temperate latitudes, may be estimated from the fact, that of 552 deaths among the whole population, 16 were from diseases of the liver, being nearly 1 in 34½.

Whereas in England, the Registrar-General's Returns show that of 148,701 deaths, only 1,909 were from the same class of diseases, being 1 in 78.

Supposing the composition of the population in regard to age, to be much the same in each, it may be inferred that diseases of the liver are more than twice as common in St. Helena as in England.

It may, perhaps, at first sight, appear singular, that the 1st Battalion of the 66th Regiment, which arrived at St. Helena from the East Indies, suffered less from hepatic disease than the 20th, which went direct from Europe. However, the former may be looked upon as seasoned.

Diseases of the Lungs.—As regards this class of diseases, St. Helena seems also remarkably healthy, the proportion of admissions and deaths among the military being not half so high as in the United Kingdom or Mediterranean stations, and the same feature is manifested in the fatal diseases of the population generally, as only 86 deaths occurred among them from diseases of the lungs in the course of five years, being in the ratio of $3\frac{2}{5}$ per thousand annually.

Whereas in Malta, the ratio of mortality by the same class of diseases among the population annually, was $5\frac{1}{2}$ per thousand And in England, by the Registrar-General's Returns for

the year ending December 1837, it was $5\frac{7}{16}$ „ „

Similar deductions will be attained by calculating the proportion which diseases of the lungs bear to all other diseases among the population of these countries respectively, viz. of deaths in St. Helena, those from diseases of the lungs were 1 in $6\frac{1}{2}$ —in Malta, 1 in 5—and, in England, 1 in 4. It is from inflammation of the lungs that the exemption in St. Helena is most marked. But Major Tulloch remarks, that the last returns shew a much greater mortality from diseases of the lungs than occurred in previous years.

Fevers. “There can be no better proof that this class of diseases may be comparatively rare, even within the tropics, than that the admissions annually have been fewer, in the proportion of 71 to 75, than among an equal force in the United Kingdom.

This conclusion does not rest on the Returns of the troops alone, for in No. II. of Appendix will be found an Abstract of the fatal diseases among the whole population of the island, during a period of 6 years, which shows that the deaths by fever only averaged from 6 to 7 annually, in a population of 4500, being about $1\frac{1}{2}$ per thousand of all ages; whereas the proportion who died from the same class of diseases in England, during the year 1837, according to the Registrar-General's Returns, was $1\frac{1}{2}$ per thousand of all ages—the same diseases thus producing nearly similar effects in each.”

St. Helena has been hitherto exempt from epidemic fever. Yet, in 1823, it prevailed alarmingly in the neighbouring island of Ascension, still more rocky and more free from wood and marsh than St. Helena.

Of deaths in St. Helena, 1 in 14 were from fever—in Malta, they were 1 in 12—and in England 1 in 16.

From a table it appears, that, though the number attacked by sickness was shown to have been fewer, in the proportion of 738 to 929, the diseases were of a much more lingering nature than in this country, owing no doubt, to the large proportion of visceral affections, which are described as being exceedingly intractable and difficult of cure.

Another table shows that the months of August and September, though the most sickly in the Mediterranean and America, are here the reverse, and that March and April, the healthiest in these Colonies, are here the least so. As St. Helena is to the southward of the Line, this is readily explained by the seasons being reversed, so that any atmospheric agency causing an increase of sickness is likely to come into operation at a directly opposite period to what has been observed at stations in the Northern Hemisphere.

On the whole it must be admitted that St. Helena is remarkably healthy. When we compare it with the Coast of Africa that we have left, we find the great points of difference to be a more moderate temperature, and an absence of that long-continued wet season, which, proximately or remotely, can hardly fail to be a source of disease. The want of much vegetation and of marsh may be paralleled indeed in some of the African stations of the deadliest character. But those stations, if not wooded or wet, are, to say the least, not so remote from a continent which is both, and is eminently rife in the seeds of fever, as the sea-girt island of St. Helena. In the latter then, we have, not one cause only of salubrity, but a combination of many—a dry soil—an open surface—a moderate heat, a comparatively temperate climate—and the regular breeze of a trade wind. If the points of difference between St. Helena and the African Coast or those islets which may be almost deemed a part of it, are so considerable, we need not be astonished at an equally considerable difference of salubrity.

III. ON THE SICKNESS AND MORTALITY AMONG THE TROOPS AT THE CAPE OF GOOD HOPE.

In this Command there are two Military Districts, one comprising Cape Town and its vicinity, the other the stations on the eastern frontier of the colony. As the latter is at the distance of nearly 500 miles from the former, and exhibits considerable difference in physical aspect, climate, and salubrity, Major Tulloch gives, first, a general description of the colony, and then investigates separately, the statistical details of each.

The south-western extremity of Africa, generally termed the Cape of Good Hope, lies in lat. $34^{\circ} 22'$ S., long. $18^{\circ} 24'$ E., and consists of a detached mass of high rocky mountains, connected with the mainland by a flat sandy isthmus, forming a peninsula about 36 miles long and 8 broad, bounded by Table Bay on its western and False Bay on its eastern extremity.

The colony of the Cape of Good Hope, however, is of much vaster extent, reaching about 560 miles in an easterly direction from Cape Point, as far as the Keiskamma River,* and about 220 in a northerly direction to the Ga-

* By the recent alterations in the boundaries, the colony now extends only to the Great Fish River.

near Orange River, including altogether a surface of above 125,000 square miles.

The whole colony is intersected by three chains of mountains, running like steep walls from east to west, and enclosing belts of land of varied character. That nearest to Cape Town, between the coast and the most southerly chain, is tolerably fertile and watered by numerous streams, is in many places well wooded, and on account of its proximity to the sea enjoys a more mild and equable temperature than the interior. Between the most southern and second range called the Zwarteberg or Black Mountains, the country presents a great extent of arid plain, occasionally interspersed with small farms and plantations, wherever a sufficiency of water can be found to render the soil available for cultivation; while between the second and third range extends an arid, barren, and almost uninhabited desert, 300 miles in length, and 80 in breadth, known by the name of the Great Karroo.

These mountain ranges, as well as the general surface of the country, rise gradually towards the interior, the plain of the Great Karroo being nearly 1,200 feet above the level of the sea, and the range of mountains which bounds it on the north, termed the Nieuwveld, attains in some places the height of nearly 10,000 feet.

There is likewise a gradual ascent, by successive hills and terraces, from the western coast towards the last-mentioned range, and this portion of the country exhibits the same wild desert character as the great Karroo, except in a few spots at the base of the mountains, or by the banks of springs or rivulets, where the supply of moisture adapts the soil for pastoral and agricultural purposes.

Between the extremity of the third range of mountains, and the vicinity of the Orange River, which forms the northern boundary of the colony, a rocky desert of immense extent intervenes, equally destitute of soil and water, and occupied only by the wandering bushmen, and a few tribes of Hottentots.

At the eastern extremity of the Great Karroo, the mountains gradually decline towards the sea, and a fine extent of pastoral country, intersected by several streams and rivulets, opens to the view. This forms what is termed the Eastern Provinces, which, prior to the late alteration of the boundaries, extended as far as Keiskamma River.

The cause of so large a portion, amounting probably to nine-tenths of this extensive colony, being totally unproductive, and available for no useful purpose, arises, not so much from any deficiency in the soil, as from the want of water. In many of the desolate regions bordering on the Great Karroo, three years have sometimes elapsed without a drop of rain, and even in the more favoured districts of Albany and Uitenhage, the supply is exceedingly limited and irregular.

When rain does fall it is in torrents, accompanied with thunder-storms, filling the river-courses, overflowing their banks, and soon leaving the country as arid as before. Nature has protected the colony by the desert to the north. But on the east the Caffres, have rendered an extensive line of military posts requisite.

A. The Cape District.

The country to the east of Cape Town is an extensive, and for the most part, barren sandy plain, terminated at the distance of 30 or 40 miles, by the rugged and abrupt mountains of Hottentot Holland. At the extremity of this plain lies the district of Stellenbosch, which, possessing abundance of water and a good soil, presents a pleasing exception to the general sterility. The country to the distance of 10 or 12 miles south from Cape Town is also highly cultivated, well wooded, and thickly inhabited.

The town is situated on a gravelly plain at the west side of Table Bay, having a gentle ascent towards the foot of three barren precipitous mountains which, stretching from the north-west to the north-east, form an amphitheatre, having its front to the bay.

As the surface of these mountains is composed principally of sand-stone, which reflects the solar rays during the day, and gives out a portion of its acquired heat during the night, the town is, from its position, subject to a much higher temperature in summer than is usual in similar southern latitudes. This will be apparent from the fact, that a thermometer which, a little after mid-day, stood at 86° in the shade, rose to 136° on being hung against a wall exposed to the sun and breeze. When unsheltered, it occasionally ranges, during the middle of summer, from 105° to 110° .

The want of rain and moisture, which renders the greater part of the interior a barren desert, is but little experienced in the Cape district. The average number of rainy days, during a series of years, was 75, and the quantity which fell averaged 41 inches annually, but we possess no accurate measurement of the relative quantity in each month.

The prevailing winds at Cape Town are from the south-east and north-west; the former is most common during summer, and, blowing over the sandy flats between the town and Simon's Bay, is usually sultry; the latter, being a sea-breeze, is cold, chilly, and often accompanied by heavy falls of rain, and violent gales.

South-westerly winds prevail during spring and autumn, and coming across the wide expanse of the Southern Ocean, are generally surcharged with moisture, which wraps the summits of the mountains over Cape Town in dense fogs. As the upper stratum of the air becomes cooled, these rapidly descend in tempestuous blasts, causing an immediate reduction of temperature, with an equally sudden transition from an extremely dry to a damp raw atmosphere.

A detachment is furnished from Cape Town to a small rocky island in the entrance to Table Bay, called Robben Island. There is another military station at Simon's Town, about twenty-two miles distant, situated at the foot of a steep mountain, on the shores of a bay in which the shipping generally take refuge during the winter months, when the wind blows with such violence into Table Bay as to render anchorage there exceedingly dangerous. The climate of this station is neither so variable nor so liable to sudden transitions as that of Cape Town, and the thermometer is lower by several degrees. The town is well sheltered from the violence of the north-west winds, and those from the south-east coming direct from the ocean, are cool and pleasant. As it rarely blows from any other quarter, and as both these winds are laden with moisture, considerably more rain falls than at Cape Town.

Neither the variable climate of the Cape District, nor the high range of temperature during the summer, seem by any means prejudicial to health, for in 1833, the deaths were only 681 out of a population of 31,167, being 1 in 46, while in the United Kingdom, according to the last census, the proportion was 1 in 47½. When it is taken into view that among the former are included the deaths of many invalids who arrived at Cape Town in the last stage of disease, there can be little doubt that, so far as regards the resident population, the climate is at least as favourable to the constitution as that of Britain.—It may be stated as a further proof, that in the neighbouring districts of Swellendam, Stellenbosch, and Worcester, where the deaths were not so liable to be increased by the arrival of invalids, the mortality for 1833, was only 707, out of a population of 47,071, or 1 in 67, being a lower ratio than in the healthiest counties in this kingdom.

The duties of the troops are, on the whole, light—the barracks respectable, save at Cape Town—where they are too hot in the summer—the rations not bad, save that there is no supper, and 19 hours are passed without food, a practice reprehensible in a country where ardent spirits can be so readily procured.

Mortality.—With casualties, this amounts to 15½ per thousand, being very nearly the same as among the Dragoon Guards and Dragoons in the United Kingdom, which, combined with the facts already adduced in regard to the civil population of the Cape District, affords sufficient evidence of the general salubrity of that part of the Colony.

It will be observed that both the sickness and mortality have been very uniform in every year; the highest ratio was in 1825, when fever and dysentery were very prevalent. This uniformity in the results of each year, is, in a great measure, owing to the absence of epidemics. For cholera has not hitherto found its way there, and influenza has been milder than in any quarter of the globe. Intemperance, however, is very common, and though the young soldier escapes, among the older ones the ratio of mortality increases with great rapidity.

From a table it appears that, out of 22,506 admissions, 14,661, or very nearly two-thirds of the whole, are of that description which seldom prove fatal, and for which, indeed, if the soldier had been left to his own option, it is by no means probable he would have submitted to the confinement of hospital. The same feature, and to nearly the same extent, was noticed in recording the diseases among the Dragoon Guards and Dragoons in the United Kingdom. This always constitutes a marked distinction between the diseases of tropical and temperate climates, and shows that the number of admissions into hospital among the troops is of little use as an element for estimating the salubrity of a station, or the probable efficiency of a garrison, unless accompanied by an accurate specification of the diseases by which they have been caused.

The severe diseases prevail in the following order—diseases of the stomach and bowels—diseases of the lungs—fevers—rheumatic affections.

Fevers.—Comparing these with the average extent of sickness and mortality from the same cause among troops in the United Kingdom, we find them nearly to correspond, the admissions being as 88 to 75, the deaths as

1.9 to 1.6. The extreme rarity of fevers of the intermittent and remittent type, is particularly striking; indeed, among the inhabitants they are said to be altogether unknown.

“The sandy nature of the soil, the rocky formation of the under strata, the total absence of marsh, and the comparative scarcity of wood and forest in Cape Town and its vicinity, have all been assigned as causes of this marked exemption from remittent and intermittent fevers; but we shall hereafter have occasion to show that in other colonies, the Mauritius for instance, these diseases are equally rare, at stations of which the physical character is directly the reverse.”

Most of the cases of common continued fever are said to have arisen from the immoderate use of Cape brandy. At all events this did not add materially to the mortality. Except in 1825, the number of fever cases has been remarkably uniform. On that occasion the disease was principally confined to the 55th and 98th regiments; of the former, 73 were attacked out of a strength of 366; of the latter, 113 out of 556, being exactly a fifth in each instance. The 49th, though also at Cape Town, did not suffer more than usual, nor did the disease extend to the troops at Simon's Town. It is said to have been somewhat different from the usual form prevalent in the garrison, assuming in most cases a mild typhoid character, and was supposed to have originated with the 98th regiment, a corps recently raised, and which had then newly arrived in the garrison.

Eruptive fevers have been exceedingly rare.

Diseases of the Lungs.—In most of the Medical Reports, the prevalence and fatal character of this class of diseases is strongly commented on, under the impression that, owing to the sudden changes of temperature and violent gusts of wind to which Cape Town is exposed, the troops are more subject to them than in other colonies. We find, however, the reverse of this to be the case. For, on comparing this and other Reports, it turns out that, the deaths annually per 1000 of the strength from all diseases of the lungs in the Colonial Stations were the following:—Windward and Leeward Command, $10\frac{4}{10}$;—Jamaica, $7\frac{3}{10}$;—Gibraltar, $5\frac{2}{10}$;—Malta, 6;—Ionian Islands, $4\frac{8}{10}$;—Bermuda, $8\frac{7}{10}$;—Canada, $6\frac{7}{10}$;—Nova Scotia and New Brunswick, $7\frac{1}{10}$; and Cape District, $3\frac{2}{10}$.

“This shews better than any other description of evidence can possibly do, how erroneous is the impression that the climate of this district has any peculiar tendency to excite or aid in the development of pulmonary affections. On the contrary, the aggregate mortality from them is less than in any of the colonies above referred to, and the degree of prevalence is greatly under the average, though, according to the generally received opinions on such subjects, the climate might be supposed much more likely to induce them.

This error has probably originated in there being hitherto no document whereby a medical officer could compare the influence of the same diseases in other colonies with that in which he is serving; consequently, in healthy climates, where the admissions and deaths by diseases of the lungs must always form a considerable proportion of the aggregate sickness and mortality, their influence is apt to be over-rated, while in unhealthy climates, where they form a comparatively small item in the general mass, the reverse is the case, though they may in reality be more prevalent and fatal.”

Facts, like this, are invaluable to medicine, and we must repeat that these

Reports go very far towards shaking some of the notions which have taken deep root in the minds of medical men.

Complaints of the lungs have preserved a very great uniformity in the several years through which the Report extends.

Diseases of the Liver.—Though this Colony enjoys a happy exemption from other tropical diseases, those of the liver are rather frequent in occurrence; the proportion of admissions and deaths is nearly the same as in Malta or the West Indies, 22 per thousand being attacked, and $1\frac{1}{8}$ per thousand of the strength dying annually by them. Neither here, nor on the eastern frontiers of the Cape, however, do they produce the same fatal effects as at St. Helena or the West Coast of Africa, though the temperature, particularly on the frontiers, ranges higher during summer than in either of these Colonies.

Diseases of the Stomach and Bowels.—This class of diseases does not in the aggregate exhibit any great degree of prevalence, the ratio of admissions compared with what has been observed among troops in the United Kingdom, being relatively as 126 to 94. It is even considerably lower than in British America; but with this marked distinction, that there, affections of the bowels show themselves chiefly in slight attacks of diarrhœa which yield readily to remedial measures, whereas in this colony, nearly one-half of the cases assume the form of dysentery, which, after repeated relapses, become chronic, and in that stage are so apt to prove fatal that the deaths average 1 in $4\frac{1}{2}$ of the admissions.

This distinction will account for the mortality from diseases of the bowels being thrice as high as in the North American stations, and nearly five times as much so as in the United Kingdom. In that respect the troops at the Cape seem nearly on a par with those in the Mediterranean. Much of their sufferings from these diseases have been attributed to habitual intemperance, the want of due precaution when labouring under slight attacks, and an unguarded indulgence in the use of fruit, which the colony produces in great abundance.

It has been stated that regiments newly arrived suffer, in this respect, to a greater extent than others, but, though that was the case in 1822 and 1825, it does not appear to have been so, on prior or subsequent occasions, when changes took place in the garrison. Very few cases, however, particularly of dysentery, have occurred from 1831 to 1836, a period during which no new corps arrived, and this seems to favour the idea of the tendency to these diseases being diminished, as the troops acquire experience in guarding against the causes likely to induce them.

Diseases of the Brain.—"This class of diseases exhibits nearly the same degree of prevalence and severity as in the North American colonies. A large proportion of the cases are said to have been, directly or indirectly, attributable to intemperance, but here this vice does not seem to produce the same baneful effects, by giving rise to delirium tremens, as among the troops in North America, where that disease is nearly tenfold as common. If the relative prevalence of delirium tremens throughout all the colonies is investigated, it will be found rare wherever wine is procurable at a moderate rate, compared with stations at which spirits form the principal intoxicating medium; a circumstance which should

lead to the sale of the latter being placed under more rigid regulations than the former, as having greater tendency to induce permanent injury of constitution."

In noticing the various minor complaints, Major Tulloch dwells on the tendency of the climate of the Cape to induce rheumatic affections. In this respect, it is worse than the United Kingdom, or any of the colonies which have yet come under our observation. These diseases are also said to be still more common among the civil inhabitants, and are attributed to the winds, during spring and autumn, being so much surcharged with moisture, and blowing, in such violent gusts, from the mountains. The latter of these causes may, perhaps, have some effect, but the influence of the former appears very doubtful, because, on the eastern frontiers, which suffer under an extreme want of moisture, rheumatic affections are found to be nearly as common as at Cape Town.

Veneral diseases are rather more numerous than in the United Kingdom, and some of the cases are exceedingly obstinate of cure, especially when contracted from Hottentot females, whose dirty and dissolute habits are said materially to aggravate their virulence. No sanatory regulations can be said to be established.

In the winter and spring of 1825, erysipelas prevailed to a great extent in the 98th regiment, but did not attack any of the other corps; there were in all 22 cases, 3 of which proved fatal. No satisfactory reason could be assigned for its appearance, nor did it seem at all connected with any atmospheric influence observable at that period. The disease ceased as summer approached, nor has it since been common at the station.

b. Eastern Frontier District.

The troops employed on the Eastern Frontier of this Colony are principally stationed in the Province of Albany, which is bounded on the west by part of the province of Uitenhage; on the north by a lofty, and in many parts inaccessible range of rocky mountains, rising to the height of from 7000 to 10,000 feet; on the south by the sea; and on the east, by the Great Fish River, and territory of the Caffres.

In the province of Albany, the mountains break into a pleasing succession of hill and dale, forming a rich pastoral district. The soil in most parts is alluvial, but on approaching the sea, where the surface declines into a succession of level plains, it becomes light and sandy.

The aspect of this part of the colony is described as being extremely pleasing; the high grounds are in general thickly covered with bush, but the low grounds are open, and occasionally dotted with clumps of mimosa, which give them the appearance of an extensive park. Though intersected with streams and rivulets, these frontier provinces frequently labour under a great want of water. Except in the vicinity of the sea, but little dew is deposited at night; and as rain only falls in any quantity during the months of November, December, and January, the herbage is frequently destroyed for want of nourishment. Even the water requisite for the use of the troops is sometimes difficult to be procured; and, in consequence, the positions occupied by them along the frontiers have been selected, not so much with reference to the facility the ground may happen to afford for the

purpose of military defence, as from its vicinity to some of the rivers ensuring at all times an adequate supply of this necessary of life.

The climate in different parts of the frontier varies very materially; about Graham's Town and near the sea coast the winter nights are sharp and clear, accompanied by slight frosts, while the summer heat, though sometimes intense, is generally tempered by a cooling breeze. At some of the posts, however, which do not possess this advantage, and where the wind is heated by the arid and sandy surface of the interior, the temperature during summer is excessive. On the Keiskamma and Great Fish Rivers, for instance, the thermometer about noon has been frequently known to range for several weeks, from 105° to 110° in the shade, and from 135° to 140° in the sun; and even during several months it has seldom been under 95° at that hour.

This portion of the colony, however, is, throughout the whole year, subject to very sudden transitions of temperature; the thermometer in summer has been known to fall from 110° to 64° in the course of a few hours, and, in winter, though it is often as low as the freezing point at night, it sometimes rises to 70° or 80° at mid-day. The degree of heat in summer is in a great measure regulated by the quantity of rain in the preceding season; if the fall has been plentiful, the summer is comparatively cool, if scanty, the reverse.

Notwithstanding the extremely high temperature of this climate, its salubrity is probably unequalled in any portion of the globe. As a proof, Major Tulloch states, that, in the three adjoining districts of Somerset, Albany, and Uitenbage, the deaths in 1833 did not amount to more than 327, in a population of 30,000 being only 1 in 91, which is much lower than has ever been observed even in the very healthiest districts of Great Britain. It is no doubt, possible, that from the effect of immigration, there may be a greater proportion of persons in the prime of life in these provinces, than in a country of which the population is stationary; but even making all due allowance for that contingency, we have sufficient evidence that the climate of these provinces is, in an eminent degree, favourable to the European constitution.

The duty of the regular troops, even in years when no warfare prevailed on the frontier, has generally been of a more varied and active description than in other colonies. As occasion required, they have been employed in erecting forts, building barracks, making and improving roads, escorting stores and supplies from the sea-coast to the different stations in the interior, guarding cattle in the field to protect them from the inroads of the Caffres, or patrolling the country in various directions in search of them when stolen. Though these duties have necessarily caused much exposure under an excessively high temperature, they do not appear to have militated against the health of the troops.

As, in 1834, there was an irruption of Caffres, and the posts were altered while casualties from warfare necessarily ensued, Major Tulloch stops at that year, and the Report refers to stations and seasons antecedent to that date.

Port Elizabeth or Algoa Bay, being the principal sea-port of the frontier districts, first claims our attention. It is nearly 500 miles from Cape Town; and as this distance, if travelled overland, would prove exceedingly harassing

and injurious to troops, from the arid nature of the country through which they would have to pass, all detachments and reliefs for the force on the frontier, are sent by sea from Cape Town to this port, whence they are marched into the interior. Military supplies are forwarded by the same route; consequently the station always requires the presence of a small garrison, to aid in unloading the Government stores, and protecting them from depredation. On this duty an officer and 30 men have usually been employed, under the medical superintendence of an assistant-surgeon. The barrack accommodation is so-so. A good hospital is to be built, for the sake of patients sent from the interior, who often derive much benefit from the change of air. From its proximity to the sea, the temperature during summer is nearly ten degrees lower than in the interior. The soil enjoys a greater share of moisture, dew falls more abundantly, and the climate has always had a high character for salubrity.

About 100 miles in a north-easterly direction from this port, lies—

Graham's Town—The capital of Albany, and head-quarters of the eastern division of the colony. Though this town is situated at the foot of a range of hills which intersects the province from north-west to south-east, yet, as there is a gradual ascent all the way from Port Elizabeth, it stands at least one thousand feet above the level of the sea. One of the chief branches of the Cowie river flows through it, and the soil in the vicinity is good, but there is little cultivation, owing to the supply of rain being very precarious; except in seasons of extreme drought, however, this part of the colony produces excellent pasturage.

The force quartered here has varied according to circumstances, but has generally amounted to about 400 men, principally infantry of the line, and a few artillery.

This station is subject to a high degree of temperature in summer, and to comparatively severe cold in winter. Snow is rare, but ice is often formed of considerable thickness.

The influence of the hot winds which blow over the sandy surface of the interior, is occasionally experienced here during summer, when the air becomes so arid, as to create a parched disagreeable sensation in the mouth and organs of respiration, accompanied by restlessness and slight febrile excitement. Dew is very rarely deposited, and there is a deficiency in the supply of rain, though not so great as at some of the stations further to the eastward. Notwithstanding these peculiarities, however, the climate is uncommonly salubrious, and severe or protracted indisposition is of rare occurrence among the troops.

Fort Brown—Nearly 18 miles north-east of Graham's Town, is situated on a rising ground close to the banks of the Great Fish River, and surrounded on every side by bare rocky hills, of slight elevation. The soil along the banks is of good quality, affording excellent pasturage, but beyond that, is light and sandy, and the surface either barren or thickly covered with bush. The station suffers much from want of rain; indeed, during a great part of the year the bed of the river is nearly dry. Owing to this circumstance, the supply of vegetables is very scanty, and, having to be brought from a considerable distance, they are too dear to admit of being in general use among the troops.

The strength of the garrison has varied from a captain's to a subaltern's party.

Owing to this post being surrounded by bare rocky ground, and in the vicinity of an arid and sandy expanse of country, the temperature is very high during summer; the winds from the interior are often insufferably hot, and succeeded by close sultry evenings equally oppressive. During the winter the breezes are cool and refreshing, and if there has previously been a good supply of rain, that season of the year is described as very pleasant.

On *Caffre Drift*, the *Gualana Post*, and *Fort Wiltshire*, it does not seem necessary for us to dwell, all being now abandoned. We pass on to—

Fort Beaufort.—This fort stands on a small elevation about 50 feet above the Kat, one of the principal tributaries of the Great Fish River, having some gently rising ground in front, and backed by a high range of mountains in the distance.

The Kat seldom dries up even during the hottest season, nor is it liable to overflow like several of the rivers we have described. The banks, as well as the numerous ravines with which each side of the river is indented, are clothed with wood, but in other parts, the country is generally open; the soil is composed of a rich mould, and as it enjoys the benefit of fertilizing showers during 60 or 70 days in the year, vegetation is more abundant than at the other stations; there is little cultivation, however, of any kind in the vicinity.

The climate is much more temperate than at Fort Wiltshire; the hot winds are not so oppressive, though the summers are occasionally sultry. During the depth of winter, frosts are frequent, but never severe, and the station enjoys a high character for salubrity.

About 130 men were stationed there. But the force will be much larger; and suitable barracks, &c. are to be erected.

Fort Armstrong.—This fort stands near the banks of the Kat River, on a high promontory, which, by the windings of that stream and its tributaries, is converted into a kind of peninsula, accessible on one side only. From the facility of defence thus afforded, and the circumstance of nearly 4000 Hottentots having settled in the vicinity, the position has of late grown into considerable importance.

This part of the country being a natural basin, enclosed on every side by mountains several thousand feet in height, has the advantage of being well watered by numerous rivulets from the high ground which are never dry even in summer. These rivulets being also very tortuous in their course, afford ample scope for irrigation, by means of which cultivation is carried on to a considerable extent.

Being surrounded by bare precipices, and sandy hills, the temperature of the fort is very high in summer. Hot winds from the north-west are occasionally experienced at that period, but in winter the cold is often severe, especially during the night, and so sudden are the changes of temperature, that the thermometer has been known to range from the freezing point to 80° in the course of a few hours. The climate differs from that of the stations to the southward, being more damp, and subject to heavy rains and thick fogs. The bottoms of the valleys are frequently moist and in some

places marshy, giving rise to exhalations, but in no respect injurious to the health of the troops.

The *rations* issued to the troops on the frontiers are the same as at Cape Town, but, though cattle and sheep are plenty, the meat is sometimes so lean, at stations subject to long drought, as to render the issue of an additional quantity necessary. Except at Port Elizabeth and Graham's Town, much inconvenience has also been experienced from want of vegetables; and, where the supply is dependent on the wheat grown in the vicinity, the bread is frequently of very indifferent quality. Sometimes, when vegetables are very scarce, a quantity of rice is issued to the soldier as part of his ration.

Major Tulloch gives a table, shewing the admissions into hospital and deaths among the white troops serving on the frontiers of the Cape, from which, as well as from the mortality among the civil population, there can be no doubt that this portion of the colony is more favourable to health than the United Kingdom—the ratio of admissions into hospital, annually, being relatively as 866 to 929, and the deaths as $9\frac{1}{5}$ to 14. Deducting deaths from accidental violence, we find the aggregate mortality from all causes, 12 per thousand annually, which is the lowest yet observed in any colony.

On comparing the deaths from various diseases in the Colony with those from the same diseases in the United Kingdom, it is evident that the low ratio of sickness and mortality among the troops in this part of the colony has been mainly attributable to the extreme rarity of diseases of the lungs. Pneumonia and consumption, in particular, are still less common than at Cape Town, though, from generally received opinions as to the influence of sudden atmospherical vicissitudes in inducing them, the reverse might have been anticipated, seeing that at some of the stations the thermometer in Summer has been known to range from 110° to 64° , and in Winter from 75° to 32° , in the course of a few hours. This exemption cannot altogether be accounted for by the absence of moisture and extreme aridity of the soil, because the same diseases have been found twice as prevalent and twice as fatal in Malta, where, during the Summer months at least, similar causes are in operation, with the supposed advantage also of a high temperature little subject to extreme variations.

Fevers are still more rare and less productive of mortality than at Cape Town: in fact, so far as we have yet been able to ascertain, no part of the world seems to enjoy so great an exemption, particularly as regards those of the remittent and intermittent types. Though this exemption might in some measure be anticipated, from the absence of all marshy ground, and the otherwise favourable nature of most of the localities in which the troops are posted, yet that character will not apply to all. Fort Wiltshire, Caffre Drift, and Fort Brown, for instance, are situated close to the bank of a river, which being either dry or stagnant during summer, might be expected, under a high temperature, to give rise to exhalations such as are supposed to induce febrile diseases in the vicinity of *fumières*, or beds of mountain torrents, in Spain, Portugal, and the Ionian Islands.

Diseases of the brain prove only half as fatal as at Cape Town, and are even less so than in the United Kingdom; their rarity is the more remarkable considering the exposure to which the peculiar nature of their

duties has often subjected the troops, under a temperature which, during summer, generally ranges from 95° to 110° in the shade at midday, and when the soldier has frequently no better protection from its influence than the rude wicker huts constructed by himself at the out-stations.

Though the foggy damp atmosphere, and sudden gusts of wind, to which the prevalence of rheumatic affections in the Cape District has been attributed, are but little experienced on the frontiers, that class of diseases is exceedingly common there, indeed twice as much so as in the severe climates of Nova Scotia and New Brunswick; nor are they confined to the white troops alone, for even the Hottentots suffer to a still greater extent.

In 1835 and 1836, a disease of rare occurrence in the Colony prevailed. It was towards the end of June, 1836, that very decided symptoms of scurvy began to manifest themselves among part of the 75th regiment at Fort Armstrong, and subsequently extended to most of the other stations along the frontier: the total number of cases reported, either as scorbutus or purpura, were 134, of which 4 proved fatal; the others readily yielded to change of air, with improved diet and accommodation.

Considerable difference of opinion exists as to the causes to which this disease was attributable, but the circumstances in which the troops were then placed seem sufficient to account for it. Their active service had recently terminated—a period when troops are generally most amenable to disease. The weather was exceedingly variable, the thermometer ranging from 80° at midday to 45° at night, and though the latter is deemed very cold in this climate, the huts were without fire-places, the floors were of clay or earth, and the soldiers generally slept on them without stretchers, and with only one blanket. Except a few pumpkins occasionally purchased from some of the neighbouring tribes, no vegetables could be procured, and the ration of rice, issued in lieu of them, was found a very inadequate substitute. The meat too, had, for nearly twelve months previous, been of very inferior quality, and the water was bad, as no rain had fallen for about five months. The officers and non-commissioned officers, who had the means of obtaining additional comforts, were exempt from the disease, and it did not all affect the Hottentot troops.

Hottentot Troops.—Major Tulloch very justly remarks that, “by extending these statistical investigations over the numerous colonies of the British Crown, not only are we enabled to ascertain the influence of their varied climates on the constitution of our own countrymen, but, in many instances where native corps have been formed, we can trace the diseases, and estimate the mortality, to which the aboriginal inhabitants are subject, and thereby supply a most important desideratum in the physical history of mankind, which could probably never have been obtained, with equal accuracy, from any other source.

We have in this way ascertained the diseases and mortality of the negro, both on his native continent and the foreign soil of the West Indies; we now proceed to a similar inquiry regarding the Hottentots, composing the Cape corps, who, as already stated, are quartered along the eastern frontier of this colony.”

Till 1828, this corps consisted of from 350 to 500 cavalry and infantry, but, in that year, the infantry was reduced, and the cavalry, being the

most effective species of force for service on the frontier, was augmented to about 250. Conscription was at first resorted to, but the force is now kept up by voluntary enlistment. The Hottentot soldiers are generally of low stature, seldom exceeding 5 feet 4 inches, but, though of very slight conformation, with narrow chests, they have shown themselves capable of undergoing great bodily fatigue. The disinclination at first manifested to the duties of military life gradually wore off, under the influence of a mild discipline, and the great majority of them have since become quiet steady soldiers, very submissive to authority, and of the utmost service for the duties of the frontier. Being possessed, in an eminent degree, of that acuteness of vision and quick perception, for which aboriginal tribes are sometimes so remarkable, they can, by indications totally imperceptible to an European eye, discover and follow up the traces of cattle stolen by the Caffres, which they frequently succeed in recovering, when the exertions of other troops would, in all probability, have proved unavailing.

If any of the colonists are reported to have lost cattle, a party of this corps is ordered out to recover them, and, if not thus employed, they are generally engaged in patrolling that portion of the frontiers which extends between the out-stations, and is most open to the incursions of the Caffres. They have thus little intermission of duty during the day, and every third night is passed on guard or picquet. This duty, though severe, is well suited to men of a wandering disposition, and who, probably, would never submit to the confinement and restraint of a garrison life. They are mounted on small hardy horses, well adapted for the nature of the service in which they are engaged, and the frequent privations of water and fodder they have to endure.

Intemperance in the use of spirituous liquors is, unfortunately, the besetting sin of the Hottentot, as well as the British soldier, and to this the former adds a pernicious mode of exciting intoxication by smoking hemp in large quantities. He is also apt to indulge in great excesses of animal food, when it can readily be procured. His pay and rations are the same as those of the British soldier, but occasionally the allowance of meat has been increased to two pounds a day, when there was a difficulty of obtaining a sufficient quantity of vegetable nutriment, or when, from the scarcity of fodder, the meat was of very inferior quality.

Notwithstanding their frequent exposure, and the harassing nature of their duties, the sickness and mortality among this description of troops has been exceedingly low, not exceeding $12\frac{1}{2}$ per thousand. Febrile diseases are still more rare among the Hottentots than the White Troops; indeed, it may be doubted whether any race of men in any quarter of the globe would be found to exhibit so great an exemption from them. All the cases under treatment, except two, were of the common continued type, and so slight that only one death occurred in 270 attacks.

The ratio of admissions and deaths by diseases of the lungs appears to be higher than among the white troops. This has been attributed to the narrowness of chest, already stated as a peculiarity in the conformation of the Hottentots, and also to the seeds of disease being frequently sown in early life when, in their capacity of herdsmen to the colonists, they are exposed, with a very scanty supply of clothing, to the inclemency of the weather. These causes, however, cannot have operated to any great extent, as the prevalence of inflammation of the lungs among them, compared with the

white troops, has been only as 24 to 15 ; of catarrhs, as 75 to 60 ; while the proportion of each race attacked by consumption has been to within a fraction the same, viz. $3\frac{1}{2}$ per thousand annually. The proportion of deaths by that disease is certainly higher among the Hottentots ; but it must be kept in view that many of the white troops may have been invalided, whose deaths at Cape Town or on their passage home cannot be traced ; whereas the Hottentots remain under treatment till the disease terminates in death or recovery.

Notwithstanding their frequent intoxication and constant exposure to a temperature which, in summer, is rarely equalled in any part of the world, these troops enjoy a very great exemption from diseases of the liver ; the same remark applies also to diseases of the brain, of which so far as can be traced, no fatal case has occurred during the whole period under observation.

The diseases from which they suffer most are those of the bowels, whereby nearly half the deaths in hospital have been occasioned. All the fatal cases, but one, have been from inflammation or dysentery, which though only in a slight degree more prevalent among this class of troops than Europeans, are decidedly of a more serious character, being frequently of long standing before they come under treatment, owing to the disinclination of the Hottentots to subject themselves to the confinement and restraint of hospital.

The most unhealthy quarter of the year at the Cape is from January to March.

IV. ON THE SICKNESS AND MORTALITY AMONG THE TROOPS SERVING IN THE MAURITIUS.

This island is of an irregular oval shape, 36 miles in length, and from 18 to 27 in breadth, with a superficial extent of nearly half a million of acres. It is situated in the Indian Ocean, about 500 miles to the eastward of Madagascar, from 70 to 80 north-east of the island of Bourbon, and lies in Lat. $20^{\circ} 9' S.$, Long. $57^{\circ} 28' E.$

From whatever quarter it is approached the aspect is singularly abrupt and picturesque. The land rises rapidly from the coast to the interior, where it forms three chains of mountains from 1800 to 2800 feet in height, intersecting the country in different directions. Except towards the summit, these are generally covered with wood, and in many parts cleft into deep ravines, through which numerous rivulets find their way to the low grounds, and terminate in about twenty small rivers, by which the whole line of coast is well watered from the foot of the mountains to the sea.

Though, from its mountainous and rugged character, a great part of the interior is not available for any useful purpose, yet extensive plains several leagues in circumference are to be found in the highlands, and in the valleys as well as along the coast, most of the ground is well adapted either for the ordinary purposes of agriculture, or for raising any description of tropical produce. Extensive forests still cover a considerable portion of the districts of Mahebourg, the Savanna, and Flacq, and in the centre of the island are several small lakes, but neither of these agencies seem to exert any material influence on the climate.

The soil in many parts is exceedingly rich, consisting either of a black vegetable mould, or a bed of stiff clay of considerable depth; occasionally the clay is found mixed with iron ore and the debris of volcanic rock. In the neighbourhood of Port Louis, and generally in the immediate vicinity of the sea, there is but a scanty covering of light friable soil over a rocky surface of coralline formation. The whole coast is surrounded by reefs of coral with the exception of a few openings through which vessels can approach the shore, and at these points the different military posts for the defence of the island have been established.

There is a marked difference in the climate of this island in different situations, the windward side enjoying a lower temperature by several degrees than the leeward, owing to the cooling influence of the south-east breeze which prevails during most of the year. The vicinity of the mountains also exerts very considerable influence on the humidity; and great varieties of temperature are experienced, according to the different degrees of elevation attained, so that at Moka and Plains Wilheims, in the high regions of the interior, fires are often necessary, when at Port Louis, though but two or three leagues distant, the heat is excessive.

As far as regards temperature, rain, physical aspect, and diversity of climate, this island exhibits a very striking resemblance to Jamaica; its latitude, too, is nearly the same, though, being to the southward of the line, the seasons are reversed, summer extending from October to April, and winter during the rest of the year. The principal rainy season is from the end of December to the beginning of April, but showers are frequent at all times, particularly in the high grounds and vicinity of the mountains.

The prevailing winds are from south-east to south, and from north-east to north. Easterly winds are rare, and usually accompanied by heavy rain; those from the west are also by no means common, and generally broken by long calms. Hurricanes are of frequent occurrence, and create great devastation, with much loss of life, but do not appear to exercise any decided influence on the health. They principally occur in January, February, and March, when, in this climate, the greatest degree of heat is combined with the greatest moisture.

So far as can be ascertained from the statistical returns of the island, the climate does not exert any prejudicial influence on the health of the white resident population, though, as we shall hereafter have occasion to show, it is by no means favourable to the negro race.

"The precise number of the white population cannot be ascertained with the same accuracy as the deaths, but the average of the years 1827 and 1832 amounted to about 13,000 females and 12,000 males, exclusive of the military and convicts, and the mortality calculated on that basis would be 1 in 41 annually of both sexes, or rather less than in Malta.

Though the data on which this estimate has been framed are not quite so precise as could be wished, yet we have every reason to believe in the accuracy of our conclusions regarding the general salubrity of the Mauritius, as it is shown in a work by M. Thomas on the statistics of the adjacent island of Bourbon, that the mortality of the same class of the population there does not exceed 1 in 45, which is nearly as low as in the United Kingdom."

Port Louis, the capital of the island, stands on an extensive plain about two miles in length, and nearly the same in breadth, open to the sea, but

encompassed on all other sides by lofty mountains, whose bold and rocky summits, broken into a variety of peaks and chasms, present a most singular appearance.

In consequence of its position to leeward, and this rocky barrier shutting out the south-east breeze which prevails in these latitudes during a great part of the year, Port Louis is one of the hottest positions in the island. The ground in the vicinity is generally dry and rocky, but near the shore and at the head of several creeks adjacent to the harbour, as well as along the banks of a small muddy stream which flows past the town, many marshy spots are to be found, which, under a tropical sun, might be supposed likely to generate fevers of the worst type. The extensive suburbs too are generally in a very filthy state, and, during the hot and rainy season, swampy, both from situation and soil. Yet insalubrity will not be found to result.

The barracks seem to be respectable, but hot.

Powder Mills, a station generally occupied by a detachment. About seven miles to the north of Port Louis, in a low situation, from which the ground rises on all sides, and in the vicinity of a marshy tract of land, extending about two miles to windward. Except in that quarter, the country around the post is well cultivated, and interspersed with plantations.

Cannonier Point, eight miles north of this post and 15 from Port Louis, a stone casemated tower of two stories, the upper containing two, and the lower three rooms, affording sufficient accommodation for the party of from 10 to 20 men generally quartered there.

The tower stands on a low projecting spit of land, almost level with the sea; the soil is so sandy as not to admit of cultivation, and there is no marshy ground or river in the vicinity.

Black River.—This post is about 19 miles to the south of Port Louis, on the same side of the island, and situated on a low sandy beach at the bottom of a bay of the same name. The country in the vicinity is an uncultivated plain, interspersed with rows of date and tamarind trees; but at a considerable distance to the westward, is a range of lofty mountains which shuts out the breeze, and adds materially to the temperature.

The force consists generally of an officer and 22 men, stationed in a small barrack of three rooms, with a serjeant's quarter and guard-room at each extremity. There is also a detached building for the married soldiers, with a small hospital and other offices. All are of wood raised upon stone, and afford abundant accommodation.

The former stations are those upon the leeward side of the island. On the windward side are—

Mahebourg.—This station, usually the head-quarters of the corps, is situated near the head of the bay of Grand Port. The ground to the distance of three or four miles is open and tolerably well cultivated, principally under sugar cane; the soil is dry and gravelly, but on the opposite side of the bay the land swells into a ridge of high mountains extending along the coast to the north and east, and covered with forest trees. No marshes or other supposed sources of malaria exist in the vicinity, and, being open to the

influence of the south-east wind, this station is reckoned one of the healthiest in the island.

The barracks consist of two buildings erected upon a low point of land, not more than 10 or 12 feet above the level of the sea, and, having a small rivulet in rear, are almost entirely surrounded by water.

The force here has seldom been under 200 men.

Grand River Post—is situated 14 miles to the north of Mahebourg, on the right bank of the Grand River. Behind it, a range of mountains, disposed in the form of an amphitheatre, rises to a considerable height. On the other side the country is well wooded, and in the direction of the sea there is nothing to obstruct the breeze, which blows almost constantly from the south-east. The ground is well cultivated, and no marshes or swampy situations are to be met with in the vicinity.

Flacq.—This post lies on the same side of the island, about 13 miles to the north of Grand River, and 21 from Port Louis by the usual road. It is open to the sea, and enjoys a refreshing breeze from the south-east during a great part of the year. The country in the vicinity is an extensive plain rising gradually towards the interior, the nearest range of mountains being seven or eight miles distant.

Poudre d'Or—Is another small outpost, 14 miles to the north of Flacq. The country in the vicinity is more level than at the other stations, and being farther from the mountains the climate is drier. At a short distance from the barrack is a considerable extent of marshy ground; but it does not seem to exert any prejudicial influence on the health of the troops.

To the south of Mahebourg, the previous stations being to the north of it, are Port Souillac and Jacoté.

Port Souillac—lies about 28 miles from Mahebourg, on the shores of a small creek or bay, at the mouth of the Savanna River. The detachment is stationed on a small headland forming the eastern side of the harbour, and about 30 feet above the level of the sea. The substratum of this headland, as well as the country adjacent, is basalt. There are no swamps or marshes in the vicinity, and the rain is speedily carried off by the natural drainage. As this post enjoys the influence of the south-east trade wind during a greater part of the year, it is cooler than most others in the island, and bears a high character for salubrity.

Of *Jacoté* it is not necessary to speak.

The *rations* of the white troops in this island consist of 1lb. of bread or $\frac{1}{4}$ lb. of biscuit, and 1lb. of meat, fresh or salt. The proportion of salt meat is not the same at all the stations. At Port Louis and Mahebourg it was seldom issued oftener than from 10 to 14 days per month, and the proportion is now still further reduced, but at some of the smaller posts it formed the principal diet of the soldier during the period under review. As little attention is paid to the rearing of stock, and the pasturage is said to be defective, cattle are imported from Madagascar. Vegetables are very scanty, and too expensive to be used in sufficient quantities by the troops. There is no regular sup-

per, so that the soldier passes 19 hours without food, unless he puts aside a small portion of his dinner for an evening meal.

Major Tulloch presents us with a table shewing the admissions into hospital and deaths among the white troops in the Mauritius, between the years of 1818 and 1836, inclusive. From this table we learn that among every thousand soldiers serving in the Mauritius 1249 cases of sickness have occurred in the course of the year, consequently, on an average, each man has been in hospital about once in 10 months, which is nearly the same as in the Mediterranean. The deaths which took place under medical treatment amounted to $27\frac{4}{5}$ per thousand annually; but the total mortality, including that from violent or accidental causes amounts to $30\frac{1}{2}$ per thousand. After stating the nature of these violent deaths, Major Tulloch goes on to remark, that the proportion from these causes is rather higher than in the other commands, and most of them are said to have occurred when the parties were in a state of intoxication. Besides the cases of suicide above referred to, which took place too suddenly to admit of treatment, several of the admissions recorded in the General Abstract of Diseases, arose from attempts at self-destruction, some of which ultimately proved fatal.

It will be observed that, while the mortality of the civil population little exceeds the usual ratio in the United Kingdom, that of the troops is at least twice as high as on home service. The officers also enjoy as great an exemption from sickness and mortality as any class of the resident population, so that here we may fairly conclude the sufferings of the troops to be in a great measure attributable either to their own vices and follies, or to some peculiarity in their condition, from which the others are exempt.

A marked increase, both of admissions and deaths, from almost every class of diseases, has taken place since 1828. In the six years, however, antecedent to 1818, the mortality mounted as high as 40 per thousand annually. The different stations vary materially in salubrity, the mortality being nearly one-half higher on the leeward than on the windward side of the island.

From a table it seems that the principal diseases prevail in the following order:—diseases of the stomach and bowels—abscesses and ulcers—fevers—diseases of the lungs—diseases of the liver. On comparing the diseases here with those in the Cape Town district, there is this marked difference, that in the former upwards of one-half are of so serious a character as in all probability to induce considerable injury of constitution; whereas in the latter scarcely one-third are of that description, the remainder being for the most part so trivial as not to detain the patient longer than a few days in hospital.

Fevers.—Though this island is situated within the tropics, there is a still greater exemption from fevers of the intermittent and remittent type than at the Cape, only 13 cases of the former and 6 of the latter having been recorded in the course of 19 years, and most of these could either be traced to causes independent of the climate, or were merely modifications of the common continued type.

The mild character of this class of diseases in the Mauritius, is sufficiently established by the circumstance of one case only in 89 having proved fatal, being a smaller proportion than in the United Kingdom, or any of the

Colonies of which the returns have yet been investigated. This may probably have arisen from many of the cases being the ephemeral result of intoxication, for which the patient was seldom more than a day or two in hospital.

The following observations must necessarily attract attention :—

“ We have already drawn attention to the circumstance of this island being so similar in most respects to Jamaica, lying nearly under the same latitude, but to the south of the Line, with a temperature alike to a degree, the interior of the same bold and mountainous character, and fringed by the same succession of low lands towards the coast, with little difference in soil or moisture, and like Jamaica, intersected by numerous rivers, studded with forests, and in many parts covered with the dense vegetation of the tropics. Marshy ground is not very common in either, but that supposed agency is quite as often to be met with in the Mauritius as in Jamaica, and particularly in the neighbourhood of the capital there are many low swampy spots, sluggish streams, and receptacles of filth, which, under a tropical temperature, would appear to furnish all the elements necessary for the production of remittent fever. Yet in the Mauritius only one soldier died by that disease in the course of 19 years, out of an average force of 1606, while in Jamaica 5114 perished by it during the same period out of a force not averaging above 2578; thus affording a striking instance how little is known of the real causes of that fatal epidemic, and how impossible it is, even for the most diligent observer, to arrive at accurate conclusions on the subject, from information acquired merely in one portion of the globe.”

Diseases of the Lungs.—The ratio of admissions by this class of diseases is much the same as at the Cape, but the mortality is nearly twice as high, notwithstanding the mildness of the climate and the limited range of the thermometer in this island compared with the sudden changes of temperature and violent gusts of winds so much complained of in that command.

The great source of this mortality arises from consumption, of which the proportion attacked annually has averaged $7\frac{1}{5}$ per thousand, being higher than in the United Kingdom, Mediterranean, or even America; although insular situations, particularly of limited extent, surrounded by a great expanse of ocean, and enjoying a mild and agreeable temperature, have generally been deemed favourable to persons predisposed to that disease. It seems to have been equally prevalent among our troops in the colony ever since our first occupation of it.

“ We have frequently had occasion to remark in the course of these inquiries, that it is not always in climates where other diseases of the lungs most abound, that consumption is most prevalent. Thus in the West Indies, catarrhs and other inflammatory affections are by no means so common as in the Mediterranean or North America, yet consumption is much more so; that disease is also found to be nearly twice as prevalent at the Mauritius as the Cape, though no such feature is manifested in others of the same class, but rather the reverse. It will also be observed that from 1818 to 1826, when all other diseases of the lungs were exceedingly rare, consumption was just as prevalent as at any subsequent period, thus indicating that its origin is not materially dependent on inflammatory action of that organ.”

Diseases of the Liver.—This climate exhibits much the same influence in inducing hepatic affections as that of Western Africa or St. Helena, and so insidious are the attacks, that on some occasions the result of dissection

exhibits total disorganization, when the feelings of the patient have led to no suspicion of the liver being affected. As in the East Indies, too, this disease is frequently combined with dysentery, though the hepatic symptoms are sometimes so obscure as to escape notice.

This class of diseases cannot be deemed altogether the result of exposure to a high temperature, since in Jamaica, where that agency is also in operation to at least an equal extent, the liver seems but little affected, and in the Mauritius during years remarkable for a very high temperature, as in 1824 for instance, they have not been more frequent than usual. Between 1812 and 1818 these diseases were extremely fatal, one in ten ending in death.

Diseases of the Stomach and Bowels.—This is by far the most formidable class of diseases among the troops in the Colony, more than one fourth being attacked, and upwards of 10 per thousand cut off by it annually. The great majority of the cases are reported under the head of dysentery, arising no doubt in many instances from the hepatic derangement above referred to; but, as in the West Indies, numerous cases occur also in which no such connexion can be traced. It rarely happens that the first attack of dysentery proves fatal; post-mortem examination has in almost every instance shown the tissue of the bowels to have been injured by former attacks, which rendered the sufferers particularly liable to its recurrence; the use of simple nourishing diet, with careful abstinence from all stimulants long after every dangerous symptom has disappeared, is said to be the only possible means of removing this tendency which proves so formidable a feature in the disease.

The mortality naturally falls heaviest on soldiers of advanced age, who have probably suffered from repeated attacks. Thus the youngest class of soldiers, composed principally of recruits but a short time in the colony, suffer only to one-fourth the extent of those above the age of 40.

It is singular that the officers are not affected by these diseases to a greater extent than at the Cape, or other healthy colonies; the white civil inhabitants also suffer but little from them, the mortality from all causes at a corresponding period of life not being greater than what occurs among the troops from diseases of the bowels alone.

A very marked, and not explained, increase in the frequency, if not in the mortality of diseases of the bowels has occurred since 1826. Prevailing most in the rainy months, moisture has been accused of giving rise to them; but, in Malta, they prevail in the dry months, and the wettest year known in the Mauritius, 1824, was characterised by a less than average amount of them.

Cholera Morbus.—Many of our readers must recollect the stress that was laid on the importation of cholera into the Mauritius by the *Topaze* frigate. The following statement bearing on that point may not be familiar to all.

“ In 1819, when this disease prevailed to a great extent in the East Indies, it also made its appearance at Port Louis. At first it was supposed to have been imported by the *Topaze* frigate, from which several sailors were sent into the general hospital; but the certificate both by the commander and surgeon of that vessel subsequently proved, that though three cases of dysentery had terminated

fatally on the voyage, no contagious disease had existed on board, nor, so far as could be ascertained, at any of the ports the vessel had sailed from, so that the appearance of this epidemic in the Mauritius remains involved in the same mystery as its origin in other Colonies."

We shall only observe of an epidemic, that with us has lost a great deal of its interest, not only because its violence but the very subject has been quite exhausted, *that*, in the Mauritius, "it exhibited nothing of a contagious character"—*that*, as in Great Britain, it did not affect all ranks equally, for among the civil population, the better classes of society suffered comparatively little, and among the officers no death took place, and only one was attacked—*that* the disease was tractable when noticed in the earlier stages, but if neglected for a few hours, collapse took place, and there was little prospect of recovery—and *that*, the proportion of deaths to admissions was considerably lower than on those recent occasions when it prevailed in the United Kingdom, Mediterranean, and America, for the deaths were:—

In the United Kingdom . .	1 in $3\frac{1}{4}$	In Canada	1 in 3
Gibraltar	1 „ $3\frac{1}{2}$	Honduras	1 „ 3
Nova Scotia	1 „ $3\frac{1}{2}$	the Mauritius	1 „ $8\frac{1}{2}$

Diseases of the Brain.—The ratio both of admissions and deaths from this class of diseases is unusually high, the former being four times, the latter twice as much so as at the Cape, indeed, the admissions occur in at least double the proportion of any other Colony. On investigation, however, we find that 393 cases reported as headache are stated to have been in most instances the result of intemperance, and 514 reported as *delirium tremens* were obviously the consequence of that vice, deducting these, the climate of the Mauritius has exerted no peculiarly unfavourable influence on this class of diseases, but rather the reverse.

In 1823 *delirium tremens* first appears in the returns. In that year four cases were reported. It progressively increased until 1835, when it had reached the number of 88. In 1836, it had sunk to 56. Intemperance, if gauged by this measure, would appear to have reached its maximum among the troops in the Mauritius. So fatal has the disease been, even among the non-commissioned officers, whose habits ought to have been such as to exempt them from its influence, that in 1835, four serjeants and one acting serjeant-major are recorded among its victims. Nor are its ultimate consequences confined to the fatal cases above recorded, for while labouring under it several have committed suicide, and numerous attempts have been made to do so, which, though unsuccessful, exposed the patient in several instances to long and protracted suffering, and ultimately led to his being permanently unfitted for the service.

Next, in point of frequency of *delirium tremens* to the Mauritius, comes the Windward and Leeward Command—then Bermuda—then Nova Scotia, New Brunswick, and Canada—Jamaica—the Ionian Islands—Malta—Gibraltar, and, finally, upon a par, the Cape of Good Hope and the United Kingdom.

"It says much for the salubrity of the Mauritius, that where intemperance appears so general, and its effects are manifested to so frightful an extent, the

mortality among the troops should not have exceeded 3 per cent., and had those deaths been deducted which might unquestionably be traced to this vice, it would have been even as low as $2\frac{1}{2}$ per cent.

With these facts before us, too, it is impossible to admit that the mortality which sweeps off so large a proportion of our troops in other tropical colonies, is mainly attributable to drunkenness, when we find that, in this island, where that vice appears at its maximum, the mortality of the troops is as low as has ever been observed in similar latitudes."

Dropsies.—Only nine deaths have occurred in 19 years. But, between 1812 and 1818, it was otherwise; the admissions then averaged as high as $9\frac{1}{2}$, and the deaths $3\frac{2}{5}$ per thousand of the force annually. This arose principally from a species of dropsy termed *Beri Beri*, which became exceedingly prevalent among the troops in 1812, and was of so fatal a character that 41 died out of 87 attacked; so rapid was its course, that death sometimes ensued within 24 hours. In addition to the usual symptoms of dropsy, it was frequently accompanied by loss of power of the lower extremities, spasms, feeble pulse, and a state of collapse somewhat similar to cholera. The same disease has been frequently noticed in the East Indies, Ceylon, and the Burman Empire, but no case of it has ever been reported among the troops in this Colony, except in the year above referred to.

Diseases of the Eyes were unusually frequent in 1834.

There is nothing else on which we need stop to comment in the diseases of the Mauritius.

Seychelles.—A group of islands lying about 930 miles north of the Mauritius, and between 4° and 5° of south latitude. They are fifteen in number and of various extent, some so small as not to contain above 150 acres; but the principal one, named Mahé, in which the detachment is stationed, is 16 miles long and from three to four broad, with a very steep and rugged granite mountain intersecting it longitudinally; indeed, most of the islands, though resting on a bed of coral, are covered with immense masses of granite. The soil of Mahé is principally a reddish clay mixed with sand, and is watered by an abundance of small rivulets.

The weather in these islands is described as being clear, dry, and extremely equable; storms or sudden atmospherical vicissitudes are very seldom experienced, and though so near the line, the temperature being generally modified by a slight breeze, is comparatively low, and the nights are cool, with heavy dews and frequent rains. The wind is from the north-west nearly one half of the year, and from the south-east during the other half, variations being seldom experienced except when the change is taking place from one monsoon to another. There is little difference also in the seasons except during November, December, and January, when much rain falls with occasional slight squalls.

The equability of temperature may be guessed when we state that the maximum of temperature throughout the year was 88, and the minimum 73. We cannot, therefore, be surprised when we are told that the total population of the principal islands in the group, amounted in 1825 to 582 whites, 323 free people of colour, and 6058 slaves, all of whom are said to enjoy

remarkably good health, and an exemption from the languor and debility so much experienced in other tropical climates. Extreme longevity is very common, and affections of the lungs are almost the only diseases of a serious character to which the inhabitants are subject. But it is far otherwise with the troops.

In nine years, 27 deaths have occurred out of an aggregate strength of 258, making the average ratio of mortality $10\frac{1}{2}$ per cent. annually, or nearly thrice as high as in the Mauritius.

Where the civil inhabitants are so healthy this mortality cannot altogether be attributed to the influence of climate, much of it probably originated in the diet and intemperate habits of the soldier; 11 out of the 27 deaths were from diseases of the bowels, which seem to have been materially aggravated by the constant use of salt provision, as no death has taken place from them since fresh provisions began to be issued, though previously the cases of dysentery were so severe that one in four proved fatal. The salt provisions are injurious in other ways than by mere saltiness. They induce thirst, and when arrack can be had for 2s. a gallon, the soldier will not quench it with water. Intemperance is consequently carried to a still greater length than in the Mauritius, more especially as the officers in command have no means of carrying into effect the punishments likely to restrain it.

Diseases of the liver have also been exceedingly fatal among this detachment, the deaths from them alone having averaged nearly 3 per cent. of the force annually, and as at the Mauritius, a large proportion of the dysenteric affections may perhaps be attributed to derangement of that organ. It will be observed that two fatal cases of consumption occurred among the small force stationed here, a sufficient proof that even in the most equable of climates, that disease carries off as large a proportion of victims as in the most inclement regions; the natives, too, are said to suffer considerably from it, but we possess no details to show precisely to what extent.

Black Pioneers.—These military labourers have been enlisted for the purpose of relieving the European soldiers from the performance of fatigue and other duties, which subjected them to much exposure. They are all negroes who have either been born in the Mauritius, or brought from Madagascar and Mozambique on the Eastern Coast of Africa. They are described as being a more robust and athletic race than those composing the West India regiments.

A table exhibits the admissions into hospital and deaths among these troops since 1825. As regards both, the ratio is almost exactly the same as among the black troops and pioneers in the Windward and Leeward Command, the former being as 839 to 820, the latter as 37 to 40 per thousand of mean strength annually, so that the Mauritius and the West Indies seem alike unsuited to the constitution of the negro. This shows how vain is the expectation, even under the most favourable circumstances, of that race ever keeping up or perpetuating their number in either of these colonies, when men in the prime of life, selected for their strength and capability for labor, subject to no physical defect at enlistment, and secured by military regulations from all harsh treatment, die nearly four times as rapidly as the aboriginal inhabitants of the Cape, or other healthy countries, at the same age, and at least thrice as rapidly as the white population of the Mauritius.

Indeed, so fast is the negro race decreasing there, that in five years the deaths have exceeded the births by upwards of 6000 in a population of 60,000.

However difficult it may be to assign an efficient cause, it is certain that the inhabitants of different countries have different susceptibilities for particular diseases. Fevers, for instance, have little influence on the negro race in the Mauritius, for no death has occurred from them, and the admissions have been in much the same proportion as among an equal number of persons in the United Kingdom; but here, as in all other Colonies in which we have been able to trace the fatal diseases of the negro, the great source of mortality has been those of the lungs, indeed, more die from that class alone than of Hottentot troops at the Cape from all diseases together; but the latter are serving in their natural climate, the former in one to which their constitution never has adapted, and probably never will adapt itself.

Major Tulloch compares the mortality of the negro from diseases of the lungs in various colonies. There died annually of these affections, per 1000 of mean strength—

West Coast of Africa	6 $\frac{3}{10}$
Honduras	8 $\frac{7}{10}$
Bahamas	9 $\frac{7}{10}$
Jamaica	10 $\frac{3}{10}$
Mauritius	12 $\frac{7}{10}$
Windward and Leeward Command..	16 $\frac{3}{10}$
Gibraltar	33 $\frac{7}{10}$

"Thus in his native country the negro appears to suffer from these diseases in much the same proportion as British troops in their native country, but so soon as he goes beyond it, the mortality increases till, in some colonies, it attains to such a height as seemingly to preclude the possibility of his race ever forming a healthy or increasing population.

It is in vain that we look for the cause of this remarkable difference, either in temperature, moisture, or any of those appreciable atmospheric agencies, by which the human frame is likely to be affected in some climates more than in others, and it is consequently impossible, from any other data than that which the experience of medical records furnishes, to say where this class of troops can be employed with advantage. Nearly two-thirds of the mortality from diseases of the lungs among negroes, arises from pulmonary consumption; and it is worthy of remark, as showing how little that disease affects the natives of some tropical climates, though it proves so fatal to those of others, that among 71,850 native troops serving in the Madras Presidency, the deaths by every description of disease of the lungs did not, on the average of five years, exceed 1 per thousand of the strength annually."

It is rather curious that the Black Pioneers suffer more from hepatic disease than the white troops, the mortality being as 5 $\frac{7}{10}$ to 4 per thousand of the strength. This is not the case either in Africa or the West Indies.

The diseases of the stomach and bowels are not half so frequent or so fatal among the black troops as the white, indeed, they do not suffer more from them than when serving on the coast of their native continent. Even that proportion, however, is a sufficiently formidable item in the mortality, and one which in itself would prove a serious obstacle to the increase of any population equally subject to it. Here, as in the West Indies, rheumatic affections are nearly twice as common as among the white troops.

There is a *section* on the:—

Influence of Age and Length of Residence on the Mortality among Troops serving in the Mauritius.

Some tables are presented to us, which shew that the deterioration of constitution with the advance of age in the Mauritius must have been extremely rapid. On comparing the progressive increase of mortality at the same ages among the Dragoon Guards and Dragoons serving in the United Kingdom, it appears that though, between the ages of 18 and 25, the ratio is but 7 per thousand higher than in this country, that difference increases, between the ages of 40 and 50, to nearly 60 per thousand. Consequently residence in this colony seems to affect the oldest at least eight times as much as the youngest class of soldiers.

"It is out of the question to attribute this rapid deterioration of life entirely to the influence of climate, because in that case we should find the same feature manifested in a corresponding degree among the higher ranks of officers, who, though between the ages of 40 and 50, have suffered comparatively little in this Colony; and so far from any similar feature being manifested among the civil population, extreme longevity is nearly as common as in this kingdom."

Major Tulloch naturally attributes this constitutional deterioration to intemperance. That the latter plays a very efficient part in the production of it, we do not for an instant doubt.

"Whether this rapid deterioration of life is the result of the soldier's own intemperance or of the influence of climate, however, it seems equally necessary, as a remedial measure, to limit as much as possible the period of his residence in this island, as has recently been done in the West Indies, by causing the latter years of his tour of foreign service to be passed in some other colony where the facilities to intemperance are fewer and the climate more favourable to a broken constitution. This measure certainly offers a greater probability of reformation than leaving the soldier for a long series of years exposed to the temptations which originally seduced him into a course of dissipation, and might afford some hope of such a renovation of constitution as would render him for many years a healthy and efficient soldier, instead of sinking into an untimely grave or being thrown at a comparatively early age on the pension list.

To such an arrangement there might be an objection if the health of the soldier was found to improve by length of residence, or, as it is technically called, by acclimatization; but the fallacy of such a supposition is not only proved indirectly from the facts before stated in regard to the increase of mortality with the advance of age, but directly by reference to the relative proportion of deaths during each successive year of residence, among the different corps which have arrived in the island since 1826."

Mortality of Officers.—The extreme rarity of deaths among officers in this Colony has long been a subject of remark, indeed the proportion from disease is as low as in the United Kingdom, a sufficient proof that, though within the tropics, the climate of this island, like that of St. Helena, does not of itself exercise any decidedly unfavourable influence on the health of Europeans. Officers exhibit none of that tendency to diseases of the bowels which characterises the troops.

Such are the main facts and features of the voluminous Report before us. Its author observes, on concluding it:—"when the sphere of our observations shall have been extended over all the foreign possessions of the British Crown, as will shortly be the case, a series of deductions will be obtained in

regard to the influence of the same diseases on similar bodies of troops in almost every quarter of the globe, sufficiently ample to afford the means not only of testing the accuracy of our previous conclusions, but of extending them much farther than has hitherto been deemed prudent."

For this very reason we forbear indulging in any observations of our own. When the final reports and deductions are before us, it will be time enough to apply the individual experience of the medical man to the generalizations of statistics. We will content ourselves at present with remarking on the general ability displayed by Major Tulloch, and on the absence from prejudice and bias which he shews. Perhaps this very candour and impartiality may be carried rather far, and breed a degree of scepticism unfavourable rather than favourable to the discovery of truth, in sciences which do not admit of demonstration. Be this as it may, it is a fault on the right side, more particularly on subjects where speculation has hitherto been rampant, and assertion vaunted as truth.

We would earnestly direct the attention of our readers to these Reports. We repeat that they do not merely concern our troops and colonies. They affect the very primary doctrines of medicine, and they materially affect, or should affect, our practice. They have given the death-blow to the expatriation of invalids affected with pulmonary alterations. They serve also to shew us the salubrity of our calumniated climate, and to lower our aspirations for that "sweet South," whose sunny skies and luxuriant plains too commonly smile but to betray. Statistics dispel those illusions of poesy, and even prove that consumption, the reproach of our fickle seasons, lurks as fatally in the balmy Italian Zephyr, or the sultry tropical breeze.

THE RETROSPECTIVE ADDRESS IN SURGERY, FROM JULY 1836, TO JULY 1839, delivered before the Meeting of the Provincial Medical Association, at Liverpool, on the 24th July, and published in the Eighth Volume of its Transactions. By *J. H. James*, Esq. Surgeon to the Devon and Exeter Hospital. 8vo. pp. 92.

MR. JAMES has published this Address, which gives an account of what has been done in surgery for the last three years. He follows in the wake of Mr. Crosse. The Address does not require any lengthened notice from us, as most of what he states may be found in our own pages. We need only allude to a fact or two, and an opinion.

Weight and Pulley for Fractures.—"M. Josse, of Amiens, has proposed a plan of treating these fractures by permanent extension, and in a few words it may be stated to consist in fixing the foot to the bottom of the bed, which is raised, so that the weight of the head and trunk being depending, produce a constant extension along the plane. To this some inconveniences must attach, although they are not much regarded by the proposer. I may perhaps be permitted to say that, nearly two years before M. Josse's work was put into my hands, I had

adopted the same principle, but carried it into effect in a different, possibly it may be thought a preferable mode, viz., by fixing the superior part of the body to the head of the bed, which is raised, and making extension on the limb by means of a weight fixed to the leg, properly guarded, and acting over a pulley, assisted also by a very simple apparatus, which it would occupy too much time to describe here." 20.

We would observe that it has long been customary to employ a weight and pulley to extend the limb in cases of threatened consecutive luxation of the femur from disease of the articulation. We cannot say that we ever saw much good in *that* case.

Necrosis.—"The difficulty of penetrating the hardened case of new bone when long formed, is too well known to require any comment; and it not unfrequently happens that any attempt to reach the sequestrum is either rendered abortive thereby, or occasions such a degree of disturbance to the whole shaft, as to produce more harm than good. Mr. Guthrie, to whom I allude, has availed himself of the peculiar properties of a remedial agent recently introduced (to which I shall again have occasion to refer)—the chloride of zinc, which, attacking the animal tissue of the bone, destroys it, and thus causes the earthy matter to soften and become detached. The sequestrum is by this means exposed with little pain or disturbance of the part, and may be dealt with according to circumstances. To the success of this plan I can myself most willingly testify." 43.

New Terms in Medicine.—"Another topic to which I feel it my duty to advert, is the remarkable fondness for the introduction of new terms in every department of medical science. Without for a moment questioning the propriety of abandoning those which manifestly involve an error, there were many free from any objection of this kind, because, purely arbitrary, and it would have been safer and perhaps better to retain them than to adopt others founded on scientific discoveries, in some cases questionable and liable, like their predecessors, to be reversed. Those who have witnessed with sufficient attention the repeated alterations which have occurred in our own times, will smile at the confidence now expressed in the immutable character of the technology of the day. A change of terms must be a positive good or a great evil. Amid the multiplicity of matters which engross our attention, it is very possible that confusion may arise, for we have the difficult task of unlearning what it has cost us some pains to acquire, and of learning that which is liable to be indistinctly impressed on our minds, just as one sign painted over another is often imperfectly portrayed. If new terms however are to be introduced, it would be well if they were checked by some competent authority, and not be thrown out the unlimited issue of individual speculation. For this evil I see no remedy at present except in the general jealousy of the profession, but that ought to be exercised to keep the prevailing spirit within moderate bounds." 81.

The Address is characterised throughout by good sense.

**THE PRESENT STATE OF OPHTHALMIC SURGERY IN FRANCE
AND ENGLAND COMPARED.**

A SERIES of Lectures lately published in a contemporary Journal, as delivered by M. Velpeau, on the Diseases of the Eye, suggest a comparison between the doctrines and practice of the French and English surgeons in reference to ophthalmic surgery. The Lecturer himself commences by defending his own country from a presupposed charge of inferiority to Germany and England, and throughout the lectures, there is instituted a running comparison with the two countries, and not always, we think, a just one. From the tenor of these discourses therefore, we were insensibly led to the analysis of differences in theory and practice between the French and English hospitals and the refutation of some doctrines, which it seemed to us were founded in error. From this half-unconscious labour we soon became convinced that, by a more systematic analysis of the contents of the whole series of lectures, useful facts might be elicited, and interesting conclusions drawn, for the benefit of our readers.

Leaving the question of who first led the way to the classification and more accurate study of the diseases of the eye—as one of only remote interest—we proceed at once to the surgeons of the present day, who have in both countries devoted some portion of their time, more especially to these diseases, and who, by their writings, have contributed to the advancement of this fragment of surgical science.

In reference to English surgeons M. Velpeau remarks, “we cannot, I confess, bring forward so many pure ophthalmologists, but I appeal to your reason, is it necessary to be decorated with the name of oculist to have exact notions respecting diseases of the eye? Do not these affections belong to pathology in general? And ought not every good surgeon to be acquainted with this branch of his profession as well as with all others?”

That it is not necessary to be decorated with the name of oculist in order to have exact notions respecting diseases of the eye, we not only most cordially agree, but without a knowledge of pathology generally, we hold very lightly any “notions” the pure oculist may entertain. It is precisely, therefore, for those English surgeons whom M. Velpeau quotes, and many to whom he does not allude, that we claim a high merit, if not a ground of superiority over their neighbours. They were among the first to rescue from the hands of mere oculists this important class of diseases, and replace them within the limits of general surgery. Thus the Lecturer would scarcely term “pure ophthalmologists” Travers, Mackenzie, Wardrop whom he quotes, or Lawrence, Guthrie, Tyrrel, Middlemore whom he does not mention. They have made the most valuable contributions, and indeed effectually proved that general scientific attainments, and the knowledge and practice of surgery in its most comprehensive sense form the best guarantees for the sound and judicious practice of this particular branch.

However, an invidious comparison between the individuals of different nations is by no means our object—but by analysing the doctrines of the most eminent surgeons of each, to trace out differences in practice—balance their respective merits, and so arrive at useful conclusions.

We are told “the school which reigns in France at the present day is
No. LXV. E

that of Beer—it reposes chiefly on two principles—1. Diseases ought to be classed according to the natural system—that is, according to their physical symptoms—2. The classification should also be founded on the nature of the disease which may be considered the consequence of the first. “Such are the principles which have given birth to *scrophulous, rheumatic, and catarrhal ophthalmia.*”

From these principles it appears that M. Velpeau entirely dissents—that is, “he differs entirely from those who maintain that a disease of the eye assumes peculiar symptoms because the patient’s constitution is modified by a general affection.”

Although a little farther on we find that he acknowledges the influence of general affections upon the eye, and believes that they exercise the same influence over these as of all other diseases, yet he conceives the division of ophthalmia into *scrophulous, rheumatic, and catarrhal*, is altogether erroneous. The whole of this strong difference of opinion, and the whole error he attributes to Beer and his followers, he declares to be simply this, “they judge of the constitution by the appearance of the eye, whilst we ought to judge of the eye by the constitution.”

This strikes us very strongly as little better than a jingling of words, wherein there are great distinctions with small differences.

By what means do we ever judge a patient to be *scrophulous*—is it not by the development of the disease in some tangible form? If a child is brought to a surgeon with a thickened lip—tumid belly—enlarged glands in the neck—or a slow enlargement of the knee with little pain, without any obvious cause, he forms his opinion that these are the signs of a *scrophulous* habit, and directs his treatment accordingly. If many of these signs are wanting, but instead there is an affection of the eye marked by excessive intolerance of light—a disease of long standing—with considerable action, but little power—on which local treatment produces no effective amelioration—is it not equally rational to assume this to be a type of *scrofula* developed in that organ?—and if our treatment, based upon this assumption, leads to the rapid amelioration and ultimate cure, are we not warranted in believing the diagnosis correct? Where then is the error of judging of the constitution by the character and progress of a disease in the eye. But, says M. Velpeau, “nothing is easier than to give rise in the healthy eye, by artificial means, to an inflammation assuming all the symptoms of the *scrophulous, &c.*”

We confess we are exceedingly sceptical on this point, and certainly, during a tolerably extensive experience in the treatment of ophthalmic patients, we can recall to mind no observation to confirm it. Doubtless every scientific surgeon will draw his conclusions from the general state and appearances of the patient, in addition to any specific disease in the eyes; but should no other indications exist, would M. Velpeau then reject the evidence of these diseased organs and treat them as a mere local affection?—if so, the prognosis would assuredly be of the most unfavourable kind—and but a very short time ago we could have furnished him with a case strictly *scrophulous* in all its characters, which yielded only to treatment based upon such diagnosis, and having previously resisted all other prophylactic measures, although no other signs of *scrofula* were manifest.

M. Velpeau would always judge the eye by the constitution, and doubtless

so do those from whom he expresses so strong a dissent—if there be a difference between him and his confrères of the French school, it amounts simply to this, they take into their consideration such evidence as the diseased organ presents, in addition to any constitutional signs, while M. Velpeau entirely rejects it—admitting the while that “general affections exercise the same influence over diseases of the eye that they exercise over all other diseases.”

To this it seems, so far, are M. Velpeau's claims to originality restricted, and as we cannot altogether believe that a surgeon of his standing and experience really rejects, as he would imply, the index which the principal disease affords to the constitution, we may for the present consider the *difference* in his opinions of no very solid character, and take him as our guide to the doctrines and practice of the French school of the present day.

These lectures are first devoted to the inflammatory diseases of the eye-lids and globe, laying aside every thing relating to degenerations of tissue, and we are farther reminded that he does not take into consideration the constitution of the patient or the different specific causes of disease! Sounds this not remarkably like the announcement of the part of Hamlet—left out by particular desire! If indeed this be the mode in which the diseases of the eye are studied and treated by the French school, then we might assuredly at the outset congratulate our countrymen on a difference of the highest importance, for no Lecturer of the present day, we think, would attempt to instruct his pupils by setting aside all considerations as to the constitution of the patient, or the different specific causes of disease, and indeed M. Velpeau, as early as the second lecture, abandons his own plan.

He groups the different inflammatory diseases of the eye-lids under the general term of blepharitis, presenting varieties according to the nature of the tissue primarily affected, and to the variable intensity of the inflammation—these he further defines into five classes.

The classification of the various forms of blepharitis into *mucous*, *glandular*, *granular*, *ciliary*, and *purulent*, offers little novel or worthy of remark; it is generally adopted in Europe. The granular form of blepharitis is erected into a distinct class or form of inflammation instead of being arranged, as it is almost invariably observed—viz. as a consequence of catarrhal or purulent ophthalmia. The catarrhal disease itself commences in the mucous follicles of the conjunctiva palpebralis, and when it has continued for a certain period, the papular state denominated granular results; but it is maintained in these lectures, that there is a peculiar, “a granular inflammation,” which, in common with English surgeons generally, we cannot admit.

Again, with regard to the purulent blepharitis of new born children, M. Velpeau observes that this has been improperly confounded with purulent ophthalmia, with the Egyptian, and gonorrhœal. Their unity is objected to on the grounds that the two latter do not so much attack the palpebræ as the eye itself, and the purulent ophthalmia of infants is almost entirely confined to the conjunctiva palpebralis.

In England it is pretty generally taught that these are essentially the same disease, varying greatly in their degrees of intensity or virulence, but the same in site—the same in leading characters.

Nor can we for a moment admit the accuracy of the view set forth by the

Lecturer; we maintain that the Egyptian and gonorrhœal ophthalmia, as certainly as the purulent of infants, commences in the lids, involves them *first*,—that in infants, if not speedily arrested, it spreads to the globe of the eye, destroys the cornea, and in similar manner to the Egyptian and gonorrhœal, leads to the destruction of the organ. The *catarrhal*, the *purulent ophthalmia of children*, the *Egyptian* and *gonorrhœal*, form but one family of diseases, having the same seat, course, and effects in proportion to their degree of intensity arising often from apparently different causes—yet all more or less contagious, and capable of communicating a purulent disease, the precise characters or virulence of which will be variously modified by the patient's constitution and other general circumstances.

For the treatment of these forms of blepharitis, the therapeutical means are divided into direct and indirect, which by English surgeons are termed constitutional or general, and local.

The opinions expressed as to the total inefficiency of general treatment to arrest the progress, or remove these diseases, closely coincides with the opinions and practice in England; but when we examine the local applications, upon which consequently our neighbours rely for the cure, although there is a general praise of stimulants and escharotics; in some of the severer forms, their use seems too timid in many instances to do all the service of which they are capable, particularly in the purulent forms.

For *mucous blepharitis*, the solutions of nitrate of silver, sulphate of zinc, and sulphate of copper are preferred, particularly the first; to commence, however, with half a grain of arg. nit. to an ounce of water we should deem a waste of time; two grains to the ounce we believe the lowest curative strength. In the glandular inflammations the ointments are preferred. In what is termed the granular blepharitis, M. Velpeau, after trying the various collyria, and finding them totally inadequate; in 1831, it seems, began to try that which had been determined twenty years before in England to be the only efficient practice—viz. the solid nitrate of silver and sulphate of copper. Not generally successful in his hands however, these he renounced for a powder containing sulphur and calomel, and finally concludes, that a really efficacious treatment is yet to be found, and recommends a scrambling treatment of bleedings, blisters, collyria, and a weak unguent of nitrate of silver; and when all fail, again the solid nitrate of silver, or sulphate of copper.

The experience of every surgeon whose attention has been given to these diseases will bear us out when we say, that the treatment of granular conjunctiva offers no peculiar difficulties with the general constitutional measures indicated by the state of the patient's system, and the methodical and judicious use of escharotics and counter-irritants; it is a disease which always yields, and an incurable case would be deemed a great reproach with us.

In the purulent ophthalmia of new born children, the principle of treatment is well laid down, and offers no novelty in reference to English practice; but again, the application fails in some degree, and in one particular point we must believe is erroneous, and calculated to do mischief. In the chronic stage methodical *compression* is recommended; we have observed this to be a plan unfortunately adopted without instruction generally by the nurses and mothers, and nothing but injury have we ever seen result. In these cases too the most efficient mode of applying the nitrate of silver is

neither in its solid form nor in solution, but as a strong ointment, gr. x. to ʒj. of lard, and this in the melted state, smeared over the conjunctiva palpebralis by a camel hair pencil—this, for the most severe forms, we have invariably seen most beneficial and efficient in its action. This has been both demonstrated and taught in the Westminster Ophthalmic Hospital during the last twelve years and more, and as Mr. Guthrie has been often attacked for the too lavish and indiscriminate use of this remedy, it is but fair that he should have any merit due for its bold application. When the disease is mild a weak solution answers all the purposes.

The same observation applies to the two remaining varieties of purulent ophthalmia, the Egyptian and gonorrhœal, the principal and primary seat of which, M. Velpeau insists is in the sclerotic conjunctiva—but as these, especially the latter, run a more rapid and disastrous career, no surgeon in England would think himself authorised in relying entirely upon the effect of a local remedy, and consequently free depletion, counter-irritants in the vicinity, and medicines which have a direct tendency to lower the circulation and depress the powers of the system generally, are combined. We have never seen a case where this general and local treatment, the nitrate of silver, effectively applied in the manner indicated to the whole surface of the palpebral conjunctiva, has failed in saving the eye, if, when the treatment began the cornea was safe. Without this local treatment, the value of which however is not we believe so generally appreciated as it deserves, we are convinced that, in the majority of violent attacks, no general treatment, however prompt and energetic, will suffice to arrest the disease and save the eye. The treatment as laid down in these lectures we must therefore conclude to be inefficient and inferior to that which is taught and practised by many in England.

On conjunctivitis or inflammation of the sclerotic conjunctiva there is little in the French theories or practice worthy of remark. The same principle is very properly enforced there as here, that general measures form the *adjuvantia*—and local remedies should occupy the first place in the treatment of these forms of ophthalmia. We rejoice to see that in some of the diseases, if not in others, the French students are taught to estimate the nitrate of silver at its true value in the treatment.

We could wish that even in England, where it has some strenuous advocates, its importance as a remedial agent were more generally acknowledged and understood. We speak confidently, having watched its effects in many thousand cases.

In the treatment of chemosis our neighbours would seem to be halting somewhat behind ourselves. M. Velpeau speaks slightly of scarifications—strongly recommends general depletion and the application of leeches—but it seems is unacquainted with the very effective treatment which of late years has been adopted—first we believe in the Moorfields institution—viz. completely dividing with the edge of a knife the swelled and injected tissue in radii, from the edge of the cornea taking the pupil for the imaginary centre. It is but a short time back that we saw Mr. Tyrrel by this operation most completely and effectually relieve the disease, and remove all danger to the cornea within a very few minutes' space. Scarifications, as generally understood, deserve to be spoken of as lightly as M. Velpeau has

done—we must presume therefore that the mode of treatment just described is unknown in the French Hospitals.

INFLAMMATORY AFFECTIONS OF THE CORNEA.

Intolerance of light and epiphora are dwelt upon as signs distinctive of keratitis, iritis or retinitis, and it is broadly stated and even lengthily argued, that these two symptoms never take place in pure conjunctivitis. This is contrary alike to observation and physiological facts. How is it that, if any irritating particle enters the eye, there is an immediate discharge of tears? The anatomist accounts for it at once—the lachrymal branch of the 1st. division of 5th. after supplying the lachrymal gland, sends filaments to the conjunctiva and orbicularis;—thus providing for that intimate sympathy which exists among these parts. To maintain therefore that an increased discharge of tears does not accompany and follow the acute irritation of conjunctivitis, and therefore is not a symptom, is to theorize against all observation. There is no doubt also that the inflammation of the external tissues frequently occasions a sympathetic increase of sensibility in the internal textures, producing various degrees of intolerance of light. To assume therefore that *photophobia* and *epiphora* are so distinctive of inflamed cornea that they never exist in irritations or inflammations of the conjunctiva solely, is clearly an error.

We need not follow the Lecturer through his definitions of acute and chronic keratitis—the superficial, interstitial, and deep-seated, they are generally good and accurate, in nothing differing however from the doctrines taught in our own schools, and indeed the study of the diseases of the cornea, as a separate tissue, was first most successfully cultivated in England by Mr. Wardrop.

Diagnostic signs are founded upon the colouration of the cornea, which, neither to the same extent nor in the same manner, are recognised in England. We confess that, to our minds, the definite character given to these changes assume somewhat of an imaginative character. Thus—

“Coloration of the Cornea.—Returning to the consideration of the anatomical symptoms of keratitis, we must now study the changes which take place in the colouration of the cornea, when it has become the seat of inflammation. When examined in the different stages of the disease, it will be found that the cornea may be of four distinct shades or tints; with these it is important that you should become acquainted, as they will greatly assist you in the diagnosis of the various forms of inflammation we shall have to study.

The water-green tint—The shade to which this term is applied is met with during the first period of the inflammation, and is not easily distinguished at first sight. Indeed, to form a correct estimate of the change that has taken place, the cornea must be attentively examined, and that on a patient who has only one eye affected. I describe the appearance which it then presents, under the name of the water-green tint, from the likeness which exists between the colour of the cornea and that of a sheet of water spread over a large surface, the transparency of which it very faithfully represents. Viewed sideways, and partially shaded from the light, the cornea has also a peculiarly moist humid appearance. These phenomena are not, in my opinion, to be attributed to any change in the tissue of the cornea itself, but to a change in the aqueous humour of the anterior chamber. I do not, however, attach much importance to this explanation.

The brown tint.—When the inflammation continues, the cornea soon becomes of a light brown colour. On examining it attentively, we also generally find that it is covered, either entirely or partially, with a great number of exceedingly small granulations, smaller even than those which I described as existing in granular conjunctivitis. These granulations give the surface of the cornea a rough and uneven appearance, which we might aptly compare to that of a mucous membrane in the healthy state, and constitute, no doubt, what has been described by M. Lepelletier under the name of granular ophthalmia. The change which takes place in the colour of the membrane evidently depends on an alteration of its tissue—an alteration which may be referred to the external lamellæ. We shall also see presently that it is a symptom of superficial keratitis.

The yellow tint.—A yellow colouration of the cornea is a far more serious symptom than any we have yet examined, experience having shown that it always indicates a deep-seated affection of the tissue of the organ. The yellow tint first appears as a speck in the centre of the cornea, or as a narrow band or circle round its circumference. This circle may be complete or incomplete; in the latter case, it is generally found to occupy the inferior portion of the cornea. It is important that you should become familiar with this symptom, as you might otherwise mistake it for a natural appearance caused by the reception of the cornea within the anterior border of the sclerotica. Such an error would probably be attended with disastrous consequences, the rapidity with which the yellow coloration extends being such, that unless active measures are adopted to arrest its progress, the entire cornea is invaded, and vision is nearly always more or less injured.

The dark-red tint.—This epithet does not convey as clear a notion of the colour which it is intended to describe as the expression adopted by Mr. Wardrop. He calls it the flint-stone colour; and those of you who have paid attention to diseases of the cornea, and have been able to observe it in the state the word represents, must confess that it is strictly appropriate. The change in the colour of the cornea generally commences, as with the yellow tint, in the centre."

These we repeat—as far as our own experience enables us to decide—have been elaborated to the above number and distinctness, with some little aid from the imagination.

With respect to the treatment, the same principles are taught as those acknowledged in England—viz. that here first commences the abandonment of means, chiefly local and adapted to the various diseases of the superficial tissues—for the general treatment required for the inflammation of the internal textures. The cornea is indeed the link, as it were, between the two—in its superficial covering belonging to the first class, in its deeper structure essentially to the second. Hence the peculiarity, that occasionally local, but much more frequently general treatment is chiefly to be relied upon for subduing the inflammation, while in some few cases the two methods are nearly equally required, and upon their judicious combination the cure essentially depends.

Among the therapeutical instructions, however, we find some difference from the English practice not unworthy of remark.

The first consists of the application of blisters over the eye, of which M. Velpeau speaks highly, although he confesses that it cannot be extensively adopted in private practice.

"I have employed blisters over the eye more than a hundred times, in every form of inflammation, principally with a view to ascertain when they ought to be used. I have found them an extremely useful remedy in conjunctivitis, in

superficial and in deep-seated keratitis, and especially in ulcerated keratitis. The counter-irritation they produce appears to dissipate the congestion of the tissues; to arrest or prevent the effusion of coagulable lymph, and to modify the ulcerations if any exist. They are not, on the contrary, very beneficial in blepharitis, purulent ophthalmia, in inflammation of the interior of the eye, nor even in keratitis when the inflammation has assumed the chronic form."

The following directions for their use are worthy of attention :—

"When blisters are applied over the eyelids, some precautions are necessary. The patient must close his eyelids gently, without contracting them, as they would otherwise be more or less folded, and the blister would not cover their entire surface. The blisters must be then carefully applied, in such a manner as to be in contact with every portion of the external surface of the palpebræ, and over it is placed some lint or cotton, to fill up the cavity of the orbit, in order that compression may be equal. A bandage carried a few times round the head and over the eye will suffice to keep every thing in position. You will generally find the eyelids much swollen the next day; when the blister is taken away it must be dressed as usual without any attempt being made to see the eye. In the course of two or three days the swelling diminishes—the eyelids become hardened, and the eye may be freely examined. Although the pain generally diminishes in the course of a few hours, the amelioration produced by the blister is not very sensible for a day or two. The symptoms are then found to abate, and they continue to do so for about ten days, when it becomes requisite to repeat the blister. It is necessary that you should be aware that the amelioration does not take place at first, as you might otherwise be led to despair of any effect being produced, and employ some other remedy to which the subsequent improvement would be attributed.

In conclusion, blisters over the eyelids seldom effect a cure alone, but they nearly always diminish the violence of the disease, even when every other plan of treatment has failed to do so, and thus enable you effectually to overcome the malady. I have repeatedly found this to be the case in obstinate inflammatory affections of the cornea accompanied by ulceration."

A more elegant and infinitely less troublesome application would be to paint the lid and orbit with the liquor lyttæ—the degree of counter-irritation could be accurately regulated, and this mode of blistering, quite as effective, would be much less open to the patient's objections.

Again, with reference to calomel and tartarised anatomy, the English practice meets with no advocate in the French Lecturer—with whom we are compelled to join issue. Long continued observation of the utility of these remedies, in cases probably not less numerous than those to which he refers, has led to a conclusion opposed to the opinion here expressed.

"As regards calomel, the panacea of some ophthalmologists for diseases of the eye, I have given it in every possible manner. The result of all these essays is, that I cannot allow calomel to be as efficacious a remedy as English practitioners represent it to be. The efficacy of this remedy has in my opinion been much exaggerated, it is in reality much less beneficial in keratitis, and indeed in ophthalmia in general than is commonly asserted.

"Tartarized antimony has been much praised in England by Mr. Lawrence and Dr. Mackenzie. I have myself often tried it in doses of from four or six to 10 or 15 grains, but do not believe that it exercises any specific action whatever over the disease."

The opinion on the first of these remedies is opposed to that of the majority in this country. On the value of ant. tart. English surgeons are by no means agreed.

With the following paragraph, on the contrary, we cordially assent—and although these principles have long been well understood and practised in our eye-hospitals, they are valuable enough to bear reprinting.

"However successful the general treatment of acute keratitis may be, it seldom entirely subdues the inflammation. Local treatment is not however equally serviceable in every form of keratitis. When the deeper layers of the cornea are inflamed, their influence must necessarily be very limited, as they do not remain in contact with the cornea sufficiently long to reach the seat of the affection either by imbibition or by endosmosis. Some ophthalmologists have been so much influenced by these considerations as entirely to reject local remedies in the treatment of keratitis. This rejection however is not warranted by experience, as even in diffuse interstitial keratitis the application of local remedies is not unfrequently followed by favourable results. In superficial keratitis they are extremely useful, especially when the conjunctiva is inflamed—and this is nearly always the case—by dissipating the inflammation of the conjunctiva. They also act on the affection of the cornea. This you will at once understand if you recollect the nature of the vascular communication which exists between the interior and the exterior of the eye. When ulcerations of the cornea exist, more benefit is to be derived from topical applications than any other class of remedies."

Passing on to the sequelæ and complications of keratitis, several forms of softening of the cornea are dwelt upon, which do not find place in our best works on surgery, nor have they attracted any general attention on this side the Channel. We give, therefore, the words of the Lecturer.

"I have occasionally met with a species of softening of the cornea, which is but imperfectly known; indeed I do not know whether it has ever been properly described. The cornea, the tissue of which has become exceedingly rarefied, forms between the free margins of the eyelids, a black, brown, or reddish tumor, projecting like a large staphyloma of the iris. This tumor is soft, insensible, and radiated. I first observed it in two women, nurses at the *Hopital de la Maternité*, who were both affected with a chronic vaginal discharge. They were both of a lymphatic constitution, deteriorated by poverty and bad living, and had been attacked, without any appreciable cause, with violent purulent ophthalmia. The flaccidity of the muscles, the copper-coloured appearance of the face, and the vaginal affection, led me to suppose that they were affected with syphilis, although they positively denied this to be the case."

These various forms of softening of the cornea are nearly always attended with serious consequences to the functions of the eye, the cornea being generally more or less deformed—even in the most favourable cases vision is necessarily disordered.

The ulcerations of the cornea, which are divided into five kinds, offer no peculiarity of description worthy of note, if we except the incised ulcer, described by Mr. Lawrence in his work on Venereal Diseases of the Eye, as a symptom of venereal ophthalmia, and which M. Velpeau states he has often met with, when he could not possibly attribute it to a venereal affection. But, on this subject, after his declaratory preface, we are naturally prepared to find him sceptical. A very proper distinction is made with reference to the treatment between ulcers the progress of which depend on a continuance of the corneal inflammation, and those which seem to be a source of irritation and inflammation. The definition of the three species of opacity has the merit of great pithiness.

"The *nebula*, in which the opacity occupies only the superficial lamella of the cornea—*albugo*, in which the middle layers are also affected—and, lastly, *leucoma*, in which the entire thickness of the cornea has become opaque."

With these remarks we pass on to the inflammations of the internal tissues—and first, of the sclerotic. Here we are startled by the assertion, that there is no such disease as scleritis—speaking of the pink zone of the sclerotic vessels, he says:—

"The interpretation which I give to this phenomenon, is very different from that which is generally adopted by ophthalmologists. I consider it as indicating the presence of keratitis or iritis, whilst they look upon it as symptomatic either of a specific inflammation or of scleritis.—A disease the very existence of which I think improbable."

Is this an attempt on the part of the Lecturer, by a startling contradiction to a very generally admitted fact, to attract notice as an original thinker? It is difficult to understand how M. Velpeau, with his opportunities for observation, can have passed several years in the study of ophthalmic cases without having met with the most direct contradiction to his opinion, in the eyes of his patients.

He is firmly convinced that the vascular zone and other symptoms described by authors as indicating the presence of scleritis, are merely the result of an inflammatory affection of the cornea or the iris. And what if the zone and other signs are most evident, distinct, and undeniable, with the iris perfectly natural in all its appearances—giving no one indication of inflammation—the cornea clear and bright, and equally free from any shade of disease? Can this be termed iritis—or corneitis? or is it not palpably and demonstrably a disease of the sclerotic tunic? Such a case is at this moment under our observation, giving in every particular so strong a refutation of M. Velpeau's opinion, that we confess we were startled on first perusing the observation and began to look for a misprint.

Many such cases we have seen—nor even in France does the existence of scleritis seem to be called in question, save by M. Velpeau, who, in searching for the original, seems to have lost sight of the real and the palpable. His analysis of the facts on which he assumes the existence of scleritis to be founded by its advocates, scarcely requires refutation. He first, commences by showing that iritis and corneitis will produce the injected zone—that the tunic between the vessels is white—that he has failed in producing inflammation by wounding the sclerotic, although he perfectly succeeded by injuring the cornea.

Doubtless iritis and keratitis will produce the effect—but how account for it when neither of these exist? Secondly, the tunic cannot, to the best of our belief, be seen white between the radiating vessels of the zone, as is asserted; for, in the case above quoted, we have most carefully examined. Thirdly, that he should fail in producing this zonular inflammation by a wound of the sclerotic, which is quite capable of inflaming the cornea and thus producing it—what does it prove, but that which is known to a junior student, viz. that the cornea is much more susceptible than the sclerotic coat. In this most astute departure, therefore, from the German and the French school, founded upon it, we cannot but conclude M. Velpeau's

originality to be particularly infelicitous, and based upon error of the most demonstrable character.

Not less are we at issue with the Lecturer—who again represents his individual opinions only—on the non-existence of arthritic, rheumatic, and scrophulous ophthalmia as specific diseases. This is a question of some importance, and as we entertain the conviction that much mischief would result were the profession generally to embrace the opinions disseminated in these lectures, we shall inquire into M. Velpeau's grounds for supporting them.

The Lecturer questions, in the first instance, the existence of gout, of scrofula, and of rheumatism, as specific diseases in the system—and proceeds to say that, having frequently met with these diseases where no such general complaint had ever existed, the obvious inference is, that they are not specific or depending upon a peculiar and specific disease of the system.

M. Velpeau is not the only one who has put forth this opinion in opposition to the doctrines of Beer and the German school generally.

Dr. Mackenzie, in his excellent work on the eye, says he has often been led to doubt whether arthritic ophthalmia (or, as he terms it, arthritic iritis) is in reality a gouty inflammation—yet he adds, “it is known by many remarkable characters, and is *unquestionably connected* with a peculiar state of the constitution.” M. Velpeau maintains that its characters are not peculiar, but merely those of iritis, together with some others, which are referred by authors to inflammation of the choroid membrane. And, speaking of the increased size and varicose state of the vessels, states, that this is merely a consequence of the inflammation—true, but if a mere result of ordinary inflammation, these and other symptoms would take place upon all occasions, which is not the fact. Finally, is it not strange that, while M. Velpeau strenuously maintains that neither scrofula, gout, or rheumatism impress with their own peculiar characters the inflammation developed in the eye, he at once, and without the slightest demur, admits a syphilitic iritis—blepharitis, &c. and proceeds *con gusto* to describe its specific characters and the specific treatment he judges necessary for its cure?

Our Lecturer considers it particularly “absurd to assert that a patient is rheumatic or scrophulous, merely because the ophthalmia by which he is attacked presents certain characters, although he himself may offer no symptom whatever of either the one or the other of these affections.” We confess we see no absurdity in this, more than when a knee-joint is attacked with symptoms which have been determined to be rheumatism—or a young boy's glands swell and suppurate a cheesy matter—asserting that fact, and naming the disease rheumatic or scrophulous, although “he himself may offer no symptom whatever of either the one or the other of these affections”—we presume M. Velpeau means no *other* symptom—we are quite content with the full manifestation of a disease in all its stages in one part or *organ*! and certainly do not feel warranted in denying the existence of a disease because it is not developed *cap-a-pie*, furnishing to the senses every manifestation in every part ever noted or described as evidencing “rheumatism”—“scrofula”—or “gout.” For we observe M. Velpeau's objection is not that certain characters are wanting—but that the particular diseases in ques-

tion content themselves with their development in one organ! Thus we find his objection removed as soon as he finds these affections elsewhere—he is quite willing “to allow that rheumatism or scrofula, co-existing with an inflammatory affection of the eye, exercises more or less influence over that affection”—that is, he is willing then to admit what he had so lately termed “absurd,”—viz. a rheumatic affection of the eye!

But the arguments throughout the lecture on the subject are but loosely stated, and present many very obvious contradictions—nor should we have gone at all into their analysis but for the dangerous principle enforced, that such distinctions have no practical utility, and the treatment should have no reference to them.

Then he teaches that these affections of the eye should be treated locally and seldom requires general measures—we will venture to affirm, without fear of contradiction, that if he does so, three-fourths of such patients are never cured by his treatment—that no local remedies hitherto used will remove these specific affections. But a little further on, what is our surprise to find this system entirely abandoned, and M. Velpeau declaring that, “When there is any constitutional predisposition, *such as scrofula*, I always have recourse to those therapeutic agents which are calculated to modify it!”

The long flourish of originality of opinions—maintaining the non-existence of these specific affections of the eye, and the futility of a treatment based upon the opinion that they exist, only serves to usher in—after innumerable contradictory statements, well calculated to confuse the uninitiated—a treatment precisely analogous to that adopted by surgeons who admit the existence of inflammatory affections of peculiar and specific characters.

After all this, our Lecturer, unembarrassed by his previous admissions and denials, commences a new section, and, with much sang-froid, tells us, “that an attentive and careful examination of the inflammatory diseases by which the eye is attacked, has shown us that those forms of ophthalmia which authors have denominated *catarrhal*, *arthritic*, *rheumatic*, and *scrophulous*, do not present any thing specific either in their symptoms or in their treatment, (!) but this is no longer true with regard to syphilitic ophthalmia; “for it is an undeniable fact, that syphilis does impress on inflammatory affections of the eye, peculiar characters which require a specific treatment.” Again, “we cannot but admit that it is perfectly rational to admit the existence of syphilitic ophthalmia.” Yet M. Velpeau has said it is perfectly absurd to admit the existence of specific diseases of the eye—that they have no practical utility, and are mischievous, inasmuch as they prevent the profession treating them as simple inflammations of the various tissues.

We must leave it to the Lecturer, then, to reconcile his own opinions and practice, with a free confession of our inability to accomplish the task for him.

On the subject of iritis, where there is much better evidence of judgment and careful observation, we do not remark much difference between the doctrines inculcated and those generally developed in the English schools.

The credit of the first accurate description of iritis, and consequent

improvement in the treatment, is given with candour to the German and English surgeons—Beer, Schmidt, and nearly about the same time Ware and Saunders.

A distinction is made—not original, certainly, but still scarcely sufficiently dwelt upon in English practice, we are inclined to believe, between primitive and secondary iritis—"between the inflammatory affection which commences by the iris, and that which is merely a consequence of the inflammation of some other organ."

"This distinction is important, as secondary iritis will often disappear when the affection by which it is caused has given way, and is often much less difficult to cure than primitive iritis. Local remedies also sometimes prove successful in secondary iritis, whereas they have little or no influence over the primitive form of inflammation."

With respect to the administration of mercury as a purgative, an alterative, and a sialogogue, M. Velpeau has neither, like some of his countrymen, gravely adopted the opinions of English surgeons; nor, like others, does he seem prepared to disclaim them. Judging from the opinion he gives, we must believe that his experience of the action of this remedy as a cause of mercurial action in the system, has been by no means great.

"I have very frequently given calomel, both as a purgative, as a mercurial agent, and as an alterative; and I must say, that I have sometimes seen the iritis disappear when the economy was deeply disturbed by its action. True, I have seen the decrease and final disappearance of the inflammation coincide with salivation, but I am not prepared to say whether this was the result of the medication I was employing—or whether it was mere coincidence."

We think, if M. Velpeau will give it a more extended trial, he soon will be prepared to say, with the majority of English surgeons, that mercurial action is perfectly capable of arresting the inflammatory action in the iris—that it does so in a great proportion of cases—although such a result does not invariably take place. And of all the remedial agents employed for the cure of iritis, it is the one upon which surgeons may most frequently rely. M. Velpeau has tried the turpentine but rarely—doubts its efficacy theoretically, and seems little disposed to resort to its exhibition.

Upon the whole, these lectures prove that there is little information we possess on the subject of which they treat, not possessed by our neighbours, little indeed that is not mutually shared. That, with the exception of some variations, such as we have brought before our readers, as to treatment, and a few peculiar opinions which do not always seem to us to be founded upon any well-sustained or deep conviction, there is no great or striking difference in the ophthalmic surgery of the two countries.

The chief points of difference as to the *nature* of the diseases, and which we have noticed at some length, are the existence of a granular conjunctival inflammation apart from the purulent or catarrhal—the different nature of the purulent ophthalmia of infants, and the Egyptian—the non-existence of arthritic, scrophulous or rheumatic ophthalmia—admitting as the sole specific disease of the eye the syphilitic.

These are, we find, the principal features, separating the principles and practice inculcated in these lectures, from those taught in our own schools.

As these lectures do not include the operations, we shall not at present extend our comparison beyond those diseases to which we have already directed attention.

TAGEBUCH EINER MEDICINISCHEN REISE NACH ENGLAND, HOLLAND, UND BELGIEN VON Dr. G. Varrentrapp. Frankfurt, 1839.

JOURNAL OF A MEDICAL TOUR IN ENGLAND, &c.

WITHOUT preface we shall introduce our pleasant gossiping author to our readers, and allow him, as far as mere extracts will suffice, to tell his own tale. Like all his countrymen, he is often most perplexingly minute, and that too upon matters which at best are trifling, and without interest. But as he seems to have been quite delighted with all he saw and met with on our shores, we must act as the poet bids us do to the friend we have lost,

“Be his faults and his follies forgot by thee then.”

“On the 8th day of April, 1838, at the hour of noon, I left my old father-town of *Frankfurt*, by the coach—*Eilwagen*, i. e. speed-waggon—for *Mentz*, in a cheerful and easy state of mind; my only regret being that I had not a companion with me, to whom I could speak, and unfold my thoughts, as they arose. For five years I had cherished an anxious wish to visit England, and become acquainted, by a personal interview, with its many wonderful institutions. This wish became stronger and stronger, when the period of my intended departure approached, as the red of the morning sky becomes deeper and deeper, when the rising sun approaches the horizon. I felt confident that the journey would not only renovate the health of my body, but that it would also make young again all the spirits and temper of my mind.”

From *Mentz* Dr. V. started next morning before day-light, by the steam-boat, for *Cologne*. The worthy doctor here gives us a minute description of the appearance of the morning sky, the cold frosty looks of his fellow-travellers, the bustle on board the vessel, the gradual rising of the sun, the passing of one or two steam-boats up the Rhine—which, in his usual pleasant garrulity he tells us, caused the appearance of double speed—and the ever varying aspect of each bank of the river: he all the while standing alone and absorbed in a reverie on the bows of the vessel!

Dr. *Varrentrapp* no sooner reached *Cologne* than he forthwith—for, like so many of his countrymen, he is quite an enthusiast—hurried to have a peep at its famous cathedral, and thence to the church of St. Peter, where the last work of Rubens, the Crucifixion of the aged Apostle, is to be seen. This celebrated picture had been taken to Paris to adorn the Louvre, during the Imperial dynasty; but it was returned after the peace to the church from which it had been stolen. From *Cologne* he proceeded to *Nymwegen*, which he reached in the evening, just in time to join some travellers at tea. “Here the smoking tea-urn, the round biscuits of excellent quality, and as

light as froth, and either buttered or in company with cheese, the pipes and tobacco, and the guests sitting with their hats on—all shewed that we had left Germany far behind us." *

The next town our gossiping author visited was *Utrecht*, where he tells us that he met with the "most beautiful and national specimen of a Hollander," in the person of his host, that he had yet seen. His round blooming face, dark twinkling eyes, his slightly arched nose, ample forehead, rotund figure, and grave but cheerful manners, seem quite to have captivated the Doctor's fancy.

"The dishes too," he adds, "were equally interesting, being truly national and climatic. Sago-soup with cinnamon and wine, comfrey† with nutmeg, and huge pieces of ginger."

At the *Amsterdam* Hospital he learned that Typhus is by no means of frequent occurrence in Holland; by far the most common class of fevers in the country being of the intermittent kind. Enlargements of the liver, and still more frequently of the spleen, are exceedingly common. Cases of genuine scurvy, too, are often to be seen in the wards.

Dr. *Varrentrapp* being, however, much more minute in his descriptions of the building, of the construction of the various apartments, of the beds, their curtains and so forth, than of the maladies of the inmates, we are unfortunately unable to say more of the diseases of the country, or of the character of its physicians.

One of the pieces of information that he gives us is, that the Syphilitic disease is of unusual inveteracy in many of the towns of Holland,—in consequence, he alleges, of the want of any compulsory regulations for the inspection and management of the *Freuden-Mädchen*, or filles-de-joie. So shocking, says he, is the remissness in this respect, that the physician has it not even in his power to prevent such patients from leaving the hospital before they are cured! In *Leyden*, things are still worse; for at the hospital there they will not even admit any patients affected with syphilis, regarding this disease as a punishment from God upon a vicious life!

"Is not such a custom," exclaims our author, "even worse, more barbarous than that which existed in Germany a century ago, of giving all the venereal patients a good cudgelling on their admission into and their discharge from the hospital!"

From *Amsterdam*, Dr. V. journeyed to *Haarlem*, and thence to *Leyden*. The university of this latter place still maintains its high repute in Holland: there are usually from 150 to 180 medical pupils studying there. The Museum of Natural History is of surpassing excellence; it is especially rich in all the departments of osteology, human and comparative. The celebrated Professor *Temminck* is the conservator. The *Hague* was the last place he visited before he reached Rotterdam. We find the following medical memorandum of his visit to its Syphilitic Hospital: "The most common

* It is a little curious that the Dutch have appropriated to themselves or rather, perhaps, that we English have given them the proper appellation of the Germans—*Deutsch*, *Deutschland*, &c.

† Are we right in our translation of the word *schwartzwurzel*: the same term is applied to the scorzonera, and also to the briony.

method of treatment is the exhibition of *Dzondi's* solution of the corrosive sublimate. Here we saw, God be thanked (*Gott sei Dank*), a good many cases of the disease in its primary stage. The cause of this is no doubt the circumstance of Dr. *Dingeman*, the physician, having the power of inspecting all the brothels of the place, and of compelling every girl, whom he finds diseased, to go *instantly* into the hospital."

On the whole, Dr. *Varrentrapp* does not seem to have formed a very favourable opinion of the Dutch hospitals or physicians. "The former are usually small, confined, and inconvenient, although clean and tidy; and as to the latter, they may, indeed, be good practitioners, but it must be confessed that certainly their 'outward man' is any thing but prepossessing and professional like. With hat on head, a pen in his right hand, and a cigar almost invariably in his mouth, the Dutch doctor is to be seen, at a stated hour, moving rapidly across the wards of the hospitals, marking down on the card of each patient a prescription, but seldom troubling himself with writing any report of the symptoms." Dr. *Varrentrapp* is very serious in his remonstrances with his Dutch professional brethren on the indecorousness of smoking.

"A physician owes a certain respect to every patient, although he may be the meanest beggar or the greatest rogue: herein consists the beautiful difference between the physician and the lawyer. The scum of mankind come to us medical men, not as criminals who deserve to be punished, even although they may have brought their maladies upon themselves, but as supplicants seeking our aid; and if we can relieve them, they regard us as instruments in the hands of the Almighty. Now this respect must be utterly destroyed by seeing a physician with a cigar in his mouth. A patient may accustom himself to much; but he cannot fail to see that no interest, either scientific or human, no sympathy in his sufferings is felt by a man who is probably re-lighting a cigar, when feeling his pulse, or when looking at his tongue. I do not know whether this practice is ever followed when a physician visits a paying patient."

Whether the custom be the cause or the effect of the imperturbable gravity and love of ease of the Hollander we cannot say; but sure it is, Dr. *Varrentrapp* tells us, that the Dutch doctors of the present day seem to follow their forefathers—and no doubt the forefathers theirs before them—in every respect alike in their mode of life, their mode of dress, and their mode of practice, without minding in the least the noisy changes of this *reforming* age. "He is so enamoured of old habits, that he will admit of no deviation from them. Whatever has existed for a length of time, must be in his opinion right; and all suggestions of improvement are at once checked by the reply, that the present system is found to work admirably. For example, between four and 500 hospital patients are often entrusted to the care of a single physician and his assistant; and it is expected that he should inspect and prescribe for every one of these daily. Now, what is the result? No reports of any of the cases are drawn up; all that is done is the merely writing in a book a certain short prescription opposite to the name of the patient and the number of his bed."

It is a pity that our worthy author, in his zeal to excite a reforming spirit among his Dutch brethren, does not enter a little more into details respecting the medical practice which is pursued by them, and give his readers

some idea of their mode of treatment, especially if there be any peculiarity in it, in some class of diseases.

But, as we have already remarked, his attention seems to have been altogether taken up with the construction and arrangement of the buildings, the shape of the beds, the size of the wards, and so forth.

From the *Hague* he travelled to *Delft*—where he visited the tombs of Hugo Grotius and William of Orange, who was so inhumanly murdered—and thence to *Rotterdam*.

As usual, he details all the particulars of his journey—how, for example, the steamer, that brought him over, was obliged by stress of weather to put back to *Helvoetsluys*, where it anchored for the night. “It was very unpleasant thus to spend hour after hour in a most tedious and useless manner, the vessel all the while round-about-tossed—a *Hamiltonian translation*—by the restless waves.”

Next morning, however, it crossed the Channel, and the worthy doctor saw for the first time the shores of hospitable England. The voyage up the river interested him, as a matter of course; and most minutely does he describe his astonishment at the number of steam-vessels, small boats, and ships, the buildings on each side, the docks with their forests of masts, the Custom-house, &c. &c.

At length he reaches London, “the *hauptstadt* of Europe, that mighty, miles-long central port of the whole world.”

After encountering the annoyance of porters, watermen and coachmen, he at length reaches the George and Vulture Tavern at Shadwell, from which, however, he speedily makes a retreat, in consequence of the smoke and darkness of his rooms.* Forthwith he hires a cab, and, impatient of immediately seeing something of the great capital, drives along Leadenhall Street, Cheapside, Holborn, Oxford Street, down Regent Street, and back to the City by the Strand and Fleet Street. “The multitude of coaches, cabs, omnibuses, carts, horses, not to mention the overwhelming number of foot-passengers moving in both directions along the *trottoirs*, is truly astonishing, nay almost frightful to a stranger, and can be compared only to an ant-hill in a state of commotion.”

He alludes to the construction of the street cabs—with the driver’s seat either above, or before, or behind, or at the side, but always distinct from the body of the vehicle—as very significant of the national character: “an Englishman is far too exclusive to allow a coachman to sit beside him.” He then gives a minute description of the tax on tradesmen’s carts, which were altogether foreign to him; but our readers will no doubt readily dispense with the particulars.

After the rapid view he thus took of some of the leading streets of the metropolis, our author went systematically to work, and examined all the chief buildings, institutions, manufactories and other *lions* visited by strangers.

As a matter of course he visited Westminster and Henry VII.th’s Chapel “with its marvellous treasure of gothic stone-work;” St. Paul’s, from whose

* We must not omit to mention that he afterwards found *sehr comfortable*—(this word seems to be naturalised in almost every European language, now-a-days,)—lodgings in Leicester Square.

top the spectator is astonished with "un endliche colossale chaos" of buildings; the Tower, "with its little town within;" the Docks, "those enormous witnesses of the mighty enterprize-spirit of this metropolis of the world's trade;" the Tunnel; the Squares, "the keeping of which closed shews how much the Engländer dislikes being intruded on;" the Palaces; the Parks;* the Theatres; the Post Office and its mail-coaches, "which few princely equipages on the Continent equal;" and the numerous Galleries of Painting, not to mention a host of other places.

The worthy doctor seems to have been charmed with the kind reception which he met with every where, and talks in most flattering terms of the inhabitants of "this mighty blooming noble island-land."

"Not only do we perceive at each step the results of individual energy, of a restless activity, of a clear and comprehensive sagacity of every one in his own sphere, of unobstructed and admirably regulated corporation-rights, and of an immoveably secured and a most intimately interwoven freedom; but we see also, on turning our attention to the private and domestic life of the people from that of their business and commerce, a not less beautiful and elevating feature in the former, than a rich, brilliant, and astonishing one in the latter!" * * * * *

"Every Englishman, to whom you may happen to be even accidentally introduced, will gladly assist you, to the best of his abilities, in attaining the objects of your journey, although he can seldom devote his time, at least during the day, to your service. It is unnecessary for me to attempt a description of the family manners of this people, the manner of their home enjoyments with their children and their friends, their dinners and suppers, and their comfortable close houses, as all this has been admirably done by Otto, in his Pictures of London."

We confess that we, as readers, should have been much better pleased with any remarks from so cheerful and so intelligent a traveller as Dr. *Varrentrapp* on our social and scientific institutions, than with the prosy architectural and statistical descriptions with which he has loaded his book. But it is of no use to complain; so let us continue to take him as we find him.

Nearly a hundred pages are occupied with a description of the numerous hospitals, asylums, and dispensaries; their number of beds, their funds and expenditure, the names of the medical officers, and so forth. First, he gives a most exact account of the University College and of King's College, their origin, success, present state, &c.; of the College of Physicians, "where, during the last two years, reform has been making great progress;" of the College of Surgeons, "in whose new building a great luxury prevails;" and of the Hunterian Museum, "so admirably kept and so beautifully arranged by Mr. *Clift* and his son-in-law, Mr. *Owen*;" and lastly of the Society of Apothecaries.

The Hospitals next come under his review; but, as usual, our worthy author is more taken up with the buildings themselves, than with the patients within, or their medical attendants.

St. Bartholomew's is most minutely described in all its particulars, down to the shape of its windows, the size of the beds, the construction of its water-closets, and the duties and wages of its nurses. The names indeed of

* Again our author alludes to the *separation-lust* of our countrymen in excluding the public from the Zoological Gardens on Sunday.

the surgeons and physicians are given; but nothing is said as to their practice.

St. Thomas's fares somewhat better; for we are told that, "in reference to clinical instruction, this is one of the most interesting hospitals in London. *Travers*, *Tyrrell*, and *Green* have long been celebrated as operators and teachers: the last usually lives at his country-house, and there pursues his studies, but he visits the hospital twice a-week. The medical clinique of *Dr. Williams* is one of the most pains-taking, most complete and least hurried of any in London. The school of this hospital is therefore much esteemed."

Gay's is next noticed; but no remarks are made on the surgeons or physicians. The doctor was present at the annual distribution of prizes to the students, when *der alle Sir Henry Halford* was in the chair, and *Dr. Addison* highly eulogised the treasurer, *Mr. Harrison*, "to whom the hospital is so much indebted in every respect."

Upwards of twelve pages are devoted to the London Hospital, and we are told of every person and of everything connected with it, except of the medical attendants and of their practice.

St. George's has only four pages, the University College has six, the Middlesex only half a page, and the Westminster only three lines, giving the names of the physicians and surgeons!

There is a little more interest in the following extract from his remarks on the Fever Hospital.

"During the year 1837—8, the number of fever patients admitted was 946; of whom 218 died. Of the fatal cases, death took place in 16 within 12 hours after admission; in 19 within 24 hours; in 24 within 48 hours; and in 15 within three days.

It thus appears that many of the patients were in the last stage of the disease when received into the hospital. The epidemic of this year was distinguished by certain peculiarities;—viz. by the greater frequency of a petechial eruption, and the more than usual tendency to extreme exhaustion and debility. Hence it has been found necessary to use more wine, brandy, and other stimulants this year than on any former one.

The following table exhibits the number of admissions, and the ratio of the mortality in the different months of the year:

	Admissions.	Deaths.	Proportion.
January ..	45	— 13	— 29 per cent.
February ..	62	— 20	— 32 "
March ..	75	— 60	— 21 "
April ..	66	— 12	— 18 "
May ..	71	— 11	— 15 "
June ..	82	— 17	— 21 "
July ..	100	— 22	— 22 "
August ..	102	— 12	— 12 "
September ..	80	— 21	— 26 "
October ..	96	— 20	— 21 "
November ..	91	— 24	— 26 "
December ..	75	— 30	— 40 "
	946	218	Medium 23."

Dr. Varrentrapp seems to have been particularly pleased with the Oph-
F R

thalmic Hospital in Moorfields. "The surgeons of this institution, Messrs. *Tyrrell*, *Scott*, *Macmurdo* and *Dalrymple* were unusually, even for England, courteous and kind to me. What surprised me much was to find that the *oleum jecoris aselli*—cod liver oil—is seemingly quite unknown here as a remedy in scrophulous diseases. The outward application of calomel too, as recommended by *Fricke*, has never been appreciated here, as this invaluable remedy deserves; and the utility of cold lotions to the eyes after operations is certainly not sufficiently understood by English oculists."

In his notice of Bethlehem Hospital, we were amused with the following passage, where he stands forward as an advocate of Mr. *Lawrence*, or rather as the reprover of the Directors.

"We may here mention a trait of religious feeling on the part of Messieurs the Directors of this institution. *William Lawrence* had published a work on the natural history of man, wherein he had expressed an opinion that the various races of men were probably sprung from more than one pair, as stated in the Mosaic record.

This so offended the Directors that notice was soon given to the author that, unless he suppressed the sale of the book, he must resign his situation as surgeon.

Lawrence bought up the impression; but, on a subsequent edition making its appearance, the pious directors of Bethlehem Hospital, believing that it was with the author's cognizance, determined to deprive him of his office. A majority, however, of the subscribers refused their assent to this act of tyranny. And who, pray, were the men who tried thus to stifle a purely scientific enquiry, and to insist upon from others an accordance with their own tenets of belief? They were the same directors who had spent in feasting one half of the income of the establishment—who had caused poor lunatic women to be chained to the walls of their cells—who had fettered the limbs of poor *Norris* with iron rings round his neck, body, and limbs—and who had imprisoned the amiable and intelligent *Mathews*.

They would have acted better if, instead of opposing the researches of science, they had devoted their attention with greater zeal to the alleviation of the poor inmates."

Dr. *Varrentrapp* condemns, and with justice too, the custom which has far too long prevailed, of closing this and other public lunatic establishments against visitors, even although they be medical men, unless, indeed, they are introduced by one of the Directors. Attention to the disorders of the mind has hitherto been too much neglected in medical studies; and hence the treatment of this most distressing class of maladies has lapsed into the hands of a few exclusives.

He was much pleased with the County Lunatic Asylum at Hanwell, and with the polite attentions of Dr. *Millengen*, the then Medical Director. With the exception of confining the patients in separate cells, instead of having large apartments where several might sleep together, he highly approved of all the arrangements of this extensive hospital, which usually contains about 700 patients. As many as are fit and willing, are kept engaged in some occupation. Thus, among the men, there were 46 employed as labourers, 42 in gardening, 25 in cleaning the wards, 61 in picking horse-hair, and one in writing accounts, &c.

Among the women, 12 were engaged in the kitchen, 24 in washing, 73

in spinning and sewing, 29 in picking wool, 37 in gardening, 27 in cleaning out the rooms, and 54 in picking horse-hair.

In closing his remarks on the London hospitals, Dr. *Varrentrapp* points out what he considers their chief merits and defects. Among the former, he particularly dwells upon their admirable cleanliness, the excellence of the provisions, the attention of the nurses, and last, though not least, of all, the number and purity of the water-closets—for which, by the bye, there seems to be no word in the German language. The leading defects he enumerates, are the insufficient frequency of the physicians' and surgeons' visits, and the want of any central board of organization, such as the *Conseil general d'administration des Hôpitaux, hospices et secours à Paris*. He mentions also the difficulties in the way of admission for patients, unless they are recommended by some subscriber or governor, and the limitation of this to one or two days only during the week. The University College Hospital is an exception indeed to this censure; for there patients are admitted daily. He goes on to observe :

"It is, however, especially remarkable that, with the enormous sums which are appropriated to the use of the various hospitals in this metropolis, there is on the whole so small a number of beds in them. The leading hospitals contain about 3,000 beds, the hospitals for special complaints about 500 more, and the lunatic establishments about 15 or 16,000. What a small proportion is this—with the exception perhaps of the lunatic establishments—to the population, in comparison with other cities. Francfort, with a population of only 55,000 inhabitants, has 500 beds in its six civil hospitals, besides another 100 for epileptic and lunatic patients; and Paris, with a population of about 800,000 has 5,000 beds in its hospitals, and 10,000 in its hospices."

In reference to the character of the clinical instruction communicated to students in the London Hospitals, the following observations of our author, however pedantically expressed, will be read with some portion of interest.

"We do not indeed hear either long complete discourses and tedious Socratic disputations, nor profound system demonstrations and curious disquisitions, as in many of the best German clinics; but we hear something which is perhaps much more incomplete, and far less intellectual, but which nevertheless is much more true and practical.

It is in that national tendency of the English to attend almost exclusively to merely practical subjects, that we are to seek for the cause of the chief differences between the English and the German physicians. We are not to expect to find among the former men of deep and comprehensive acquirements, acquainted with the history of medicine in all languages, such as is the character of some of my countrymen. A careful observation of individual cases, and the comparing of these with similar ones, either in their own practice or in that of others, and withal a practical but not a far-stretching reasoning, directed more especially to therapeutics, seem to constitute the chief ambition and certainly the leading excellence of the English physicians. They have accordingly produced some admirable monographs; but they seldom trouble themselves about systematic works. The higher fields of speculation, and a comprehensive and wide-embracing spirit of reflection, are far too troublesome, obscure, and unproductive to have any attractions for their minds.

An unprejudiced clear perception, an indestructible repose, great perseverance, and a habit of discussing every subject with perfect freedom, are admirable guides to them along their favourite path, which is the more readily pursued, as they

seldom permit themselves to be diverted by extraneous circumstances. The English are certainly less influenced by the opinions of others than any other people that I know.

From their quiet observing manner, which is almost always combined with a most laudable love of truth, they escape many of the quicksands and rocks, on which others, who indulge more in speculation and phantasies, make a shipwreck. And when they occasionally elevate themselves to subjects of higher speculation, their national self-confidence is often of the greatest use; hence many of the most valuable physiological and pathological discoveries we owe to Englishmen. What influence have the discoveries of Hunter, Bell, and others had on numerous branches of medical science.

Their surgeons exhibit the same qualities as operators, as their physicians do in medical practice: quiet, self-confident, and determined, and often very bold. Neatness and dispatch are not much aimed at; but downright roughness I never saw except in one, who is however considered as perhaps the most celebrated for his speed and dexterity. *Key, Liston, Tyrrell, Lawrence, Green, Travers, and Brodie* are the most distinguished; but I cannot suppress the remark that I saw one of these gentlemen perform an amputation of the thigh more badly than I could have believed.

After slowly making a circular incision through the integuments with two strokes of a large amputating knife, he began to dissect back the skin with its point, for about two inches. How long this took, any one may judge. The muscles were now divided down to the bone, and this step was repeated a second time; and then the bone was sawed across not sufficiently high up. At length, after upwards of five minutes suffering, a stump was formed with a projecting bone, a want of flesh and a superabundance of skin. Had such an occurrence taken place in any of the Paris hospitals the students would assuredly have hissed the surgeon out of the theatre."

The worthy doctor writes in the most grateful terms of the warm friendly reception he met with from his professional brethren in London, and closes his sketch of our medical institutions with an affectionate tribute to the talents of Sir Astley Cooper;—"who, although nearly seventy years of age, is still a very handsome man. His tall stout figure, beautiful head, and intelligent, lively and cheerful countenance, must at once strike the beholder. The large fortune that he has accumulated enables him to follow out his favourite anatomical pursuits with every advantage. He is not, like most successful professional men, still unsatisfied with his success; for, instead of hunting after some new mammon, we find him devoting his time, talents, and fortune to the advancement of professional science. At present he is engaged in an extensive work on the diseases of the mamma. His museum of preparations of the testicle and thymus gland, is unrivalled. It is to him that we owe the curious discovery that the latter of these organs serves to secrete during fetal life a whitish fluid, resembling milk or chyle, which is conveyed by an excretory duct into the jugular vein, near the opening of the thoracic duct. This function seems to terminate soon after the birth of the child."

After visiting the leading provincial towns, Dr. *Varrentrapp* passed over to Dublin. On landing, he was at once struck with the wretched and filthy condition of the lower orders, "which is not altogether attributable to their mere poverty. A clean-combed head of hair on the poorest woman in Germany looks much better than the tawdry bonnet we see on the beggars here."

We will not follow our author in his description of the various hospitals, as the Richmond, the Whitworth, the Hardwicke Fever, Steevens', Mercers', &c., but at once come to his remarks on the Meath Hospital and medical officers, Drs. *Graves* and *Stokes*. He gives a very minute account of the opinions of the latter of these distinguished physicians on the nature and treatment of typhus fever as it occurs in Ireland. We shall give a brief extract.

"According to Stokes, typhus is an *essential* fever, which affects in an especial manner in different cases, and during different epidemics, either the head, the chest, or the abdomen. The ulcerations of the intestines, so much insisted upon by French pathologists, are neither of constant occurrence, nor are they characteristic of the disease; in one epidemic they are found on dissection much more frequently than in another. The character of the fever is usually inflammatory, but often putrid; petechiæ or miliary papulæ are very generally present; but they have no essential influence on the progress of the disease, nor can their presence affect our prognosis."

Our author here mentions a minutia in examining the alvine evacuations, which is certainly quite novel to us, and worthy indeed of the zeal of a pains-taking Deutscher: "not much advantage can be obtained from the mere inspection of the stools in a *pôt-de-chambre*; they ought to be shaken about in a glass vessel some hours before the visit of the physician, and the vessels should be left every morning at the bed-side of each patient!"

"The omission of this point," adds our author, "by Stokes is the more remarkable, as in every other respect he is a most assiduous and exact observer. His excellent work on the Diseases of the Chest, known to all the medical world, is a proof of this." * * * "The treatment recommended by Stokes is very different from that which is usually followed in Germany. The greater number of my countrymen have recourse to antiphlogistic measures, and to the use of clysters, fomentations to the abdomen, and cold lotions to the head; but a considerable number of the Irish and Scotch physicians pursue a very different plan. Occasionally indeed, but seldom, leeches are applied to the head when there are symptoms of congestion there, and to the abdomen when much pain is experienced. But it is chiefly when the thoracic symptoms are more than usually troublesome that local depletions are resorted to; and then the cupping-glasses are usually preferred to leeches. The application of cold to the head also is frequently employed. * * * The principal treatment, however, consists in the exhibition of cordials and stimulants whenever, and sometimes even before, the vital powers begin to sink.* Of such remedies wine, and especially Port wine, is by far the best. Brandy, and occasionally also small doses of spirit of turpentine, may be given with advantage at the same time in certain cases. When this mode of treatment is appropriate and is judiciously administered, the pulse almost invariably becomes less frequent, and at the same time more equable and full. Musk and camphor, in large doses, are sometimes of great utility."

Dr. *Varrentrapp*, who seems to have had very extensive practice in fever as it usually exhibits itself at Francfort, confesses that he is by no means a

* Dr. Stokes, it is well known, has directed the attention of physicians, in an especial manner, to the auscultatory phenomena of the heart as affording the most valuable signs to direct our treatment in typhus fever. Whenever the impulse of the beats is very feeble, and the sounds are faint and indistinct, we need have little fear of employing stimulants, whatever symptoms are present.

convert to the stimulating plan of treatment; although he admits that he saw himself several patients, in whom symptoms of congestion were very prominent, bear the use of wine much better than he could have believed. He adds:—

“Dr. *Graves* is much more cautious and temperate in the administration of wine than his colleague; his practice is much more symptomatic, perhaps somewhat too much so. Other physicians in Dublin, especially some of the older practitioners, are very sceptical of the advantages of the wine-treatment in typhus.”

In taking his leave of the Meath Hospital, Dr. *Varrentrapp* pronounces^s a high and well deserved eulogium on the talents of its two physicians, Drs. *Graves* and *Stokes*.

“The clinique of this hospital is certainly the very best that I have seen either in England or Ireland. Nowhere have I noticed so careful and patiently minute an examination of every symptom, so extended and so useful prelections on the diagnosis, and so regular a daily visit, (even on Sunday,) as here. The relation of the teacher to the pupils too is most generous, friendly, and truly inspiring. The two ornaments of the Meath Hospital (Drs. *Graves* and *Stokes*), by their professional talents as well as by their courtesy, cannot fail to render this institution especially attractive to strangers.”

The House of Recovery and Fever Hospital in Cork-street, seems to have occupied a good deal of the attention of our author. He gives an abstract of the views of Dr. O'Brien the senior physician, as explained in his late Treatise on Typhus.

“He has arranged the various forms of the disease under four heads;—1. When the brain and nervous system are chiefly affected—the *adynamic* and *ataxic* fever of French writers.—2. When the lungs chiefly suffer—the inflammatory or synochal form.—3. When the stomach and intestinal canal chiefly suffer—the gastric fever of *Pinel*, *Cheyne*, &c. the gastro-enteric of *Broussais*; and—4. When the joints are more than usually affected—the rheumatic typhus of some authors.

The *first* of these forms is much the most dangerous, and in certain epidemics by far the most frequent too. The use of emetics in the early stage, and subsequently of wine, camphor, ammonia, &c. is chiefly indicated. In the *second* form, cupping on some part of the chest, blisters, and the exhibition of tartar-emetic are the most salutary remedies. In the *third*, the application of leeches over the epigastrium, and the use of calomel with opium, of gentle aperients, and of enemata, are chiefly useful; and in the *last* form, Dover's powder, calomel, purgatives, leeches and blisters are.”

On these views of Dr. O'Brien, our author appends the following remarks:—

“Without doubt this review of the opinions and method of treatment at the first fever hospital of Ireland, which contains nearly 500 patients, possesses considerable interest; but it must be confessed, at the same time, that it clearly shews how several distinct morbid states are blended and grouped together by the author under one denomination. It will be observed, for example, that no distinction, either in a diagnostic or curative point of view, is made between a strictly bilious fever attended with congestion in the head and tendency to delirium, and genuine abdominal typhus: at least the mode of treatment recommended for the *third* groupe or form of the disease is applicable to gastric and bilious fever, but not to genuine abdominal typhus. The physician allows himself to attach too much consequence to the word ‘fever.’”

The worthy doctor seems to have left Dublin with the greatest regret, and mentions his great satisfaction at having met with such men as Drs. *Graves* and *Stokes*, Mr. *Porter* and others. He subsequently visited Scotland; but his stay in Edinburgh and Glasgow was so limited that he did little more than merely inspect the chief lions of these cities. He returned to London, where he spent a few days again, and thence crossed over to Belgium.

"At length, after the undisturbed enjoyment of so much that was beautiful and interesting in foreign lands, I returned, on a bright Summer evening in July, through rich and fertile plains to my father town, and joyful indeed was the end of my hundred-days' journey."

TREATISE ON THE EAR; INCLUDING ITS ANATOMY, PHYSIOLOGY, AND PATHOLOGY; (for which the Author obtained a Gold Medal in the University of Edinburgh). By *Joseph Williams*, M.D. Member of the Royal College of Surgeons.

THE Essay before us obtained, as an Inaugural Dissertation, the recommendation of the Medical Faculty of Edinburgh to the Senatus Academicus, by whom a gold medal was awarded to the author. He modestly disclaims pretensions to a very complete account of so complicated a subject as the anatomy and pathology of the ear, and professes to have done little more than glance at the following topics:—The special Anatomy of the Human Ear—a brief description of Different Portions of the Ear in various Animals—the Theory and Laws of Sound—the Physiology of the Ear, and the Difficulties connected with that branch of the subject—the Pathology of the Ear, and some interesting Cases in illustration—Suggestions as to the mode of treating Diseases of the Ear—Instances of Morbid Alteration in Structure, and Congenital Malformations—their presence or absence in the congenitally Deaf and Dumb—and some observations respecting Medico-Legal facts connected with the Deaf and Dumb.

Aural Surgery has lately attracted, and is still attracting, so much attention from the profession, that we do not feel disposed to allow any opportunity of bringing it under the notice of our readers to escape us. We shall therefore run over the practical portion of the volume, and cull any facts or observations that may seem serviceable.

Dr. Williams first treats of the affections of the auricle, and notices in succession—idiopathic inflammation—erysipelas—acne—furuncle—herpetic eruptions—venereal blotches—scirrhus—wounds—malformation. We see nothing in his account of these to give us pause.

After noticing inflammation of the *meatus externus*, Dr. Williams alludes to the fact that the lining membrane of the meatus sometimes becomes thickened, and that to such a degree as to prevent the admission of vibration: this is generally observed in those who have had frequent attacks of inflammation of the meatus, with thin discharge and temporary deafness; the whole extent of the meatus is narrowed by thickening of the cuticle, with a thick white discharge resembling curds, with diminished or even sus-

pended secretion of cerumen. Mr. Earle was the first to describe this peculiar thickening of the lining membrane of the meatus; and he proposes treating this disease by the application of the nitrate of silver. He mentions a case where a very strong solution of nitrate of silver was thrown in with a silver syringe, which completely blackened the epidermis of the meatus. In a few days, warm water was injected to loosen the exfoliations. They were detached in small portions at first, and subsequently in larger pieces, one of which, from its form, was evidently the reflected layer which covered the membrana tympani. After this, the injection of water caused a distressing sensation and loud noise. The other ear was served in a similar manner, and in a few days the hearing was very nearly restored. In a former number of this Journal we noticed this case of Mr. Earle's.

Dr. Williams makes a very good observation on the mode of EXAMINING the meatus.

"The auricle should be drawn upwards and backwards; and if the rays of the sun cannot be procured, an argand lamp must be used. Several useless inventions have come before the public at various times; a common argand lamp will answer every purpose, especially if a small concave reflector or mirror be attached. The speculum is of little use to *straighten* the canal, as it can exert no influence on the bony portion; and that part of the meatus capable of being straightened, may be effected by drawing the auricle upwards and outwards; besides, however delicately a pair of forceps may be made, they must take up a great part of the calibre of the canal. The multiplication of instruments forms no small part of the resources of the quack; and however unwilling he may be to explain their uses to the medical man, yet he takes good care that his patients shall not be ignorant that he possesses such weapons.

I may here mention that whenever a powerful stimulant is necessary to be applied to the meatus, let it be done by means of a camel-hair pencil; do not inject it, as you may run the risk of endangering the tympanum, and even in some cases the labyrinth." 117.

A *large meatus* is not favourable to acute hearing; and Itard is convinced, that far from increasing audition, it notably diminishes its extent and finesse. It has been proposed to remedy this defect by inserting a small leaden tube, exactly fitting the meatus; its external opening being covered by a piece of the swimming bladder of the fish, which should be stretched on while wet. In some cases, the power of hearing has been considerably augmented by the introduction of a gold tube.

After Injuries of the Head, a serous fluid, in large quantity, may escape from the meatus. It may or may not be preceded by blood. Dr. Williams believes, in all cases where this clear fluid escapes, there is fracture through the labyrinth; and hence arises a question as to whether this fluid is an increased secretion of the liquor of Cotunnus, whether serum of blood, or fluid from the membranes of the brain? It certainly is not the serum of blood, inasmuch as several ounces have drained away in the course of a few hours; and it has been tested, and was found not to be serum. In one instance, it was collected, and considerably exceeded a pint during the night.

Dr. Williams relates a case of death from puncture of the membrana tympani by a needle, and one of death from nitric acid being poured into the ear. In both cases, inflammatory action and consequent mischief took place in the tympanum, and affected the membranes of the brain.

After describing the symptoms, which cannot but be familiar, of inflammation of the tympanum, and observing, what is also known, that it may spread to the brain, he remarks that, under such circumstances it sometimes commences in the meatus auditivus externus, but it by far more frequently begins in the throat, passes through the Eustachian tube into the tympanum, thence to the internal ear, and then the brain becomes involved. This happens especially in those cases where the gastro-pulmonary mucous membrane is in an unhealthy condition; it occurs from small-pox, measles, and pharyngitis dependent upon disordered stomach, but more especially it arises from bad cases of scarlet fever.

It ought always to be borne in mind by the practitioner, that whenever there is severe pain in the ear, either with or without discharge, there may be danger of brain disease.

Dr. Williams adds :—

“There is always danger when there is acute pain in the ear, *with pain and weight in the head*, especially if there be wandering of the eyes : and it is impossible to say when and how the inflammation may terminate, and therefore a cautious prognosis should always be given. Inflammation of the membranes of the brain is frequently an insidious disease, and a practitioner may easily be lulled into an idea of security, and imagine that he has merely a case of inflammation of the tympanum to treat, when meningitis actually exists. We should always suspect inflammation of the membranes when the pain, having previously been referred to the ear, suddenly *spreads over the head*.” 135.

When there are symptoms of this description, active antiphlogistic treatment is, of course, indicated. Dr. Williams very properly observes, that the system should be speedily brought under the influence of calomel; and, after the more acute stage, counter-irritants should be extensively and repeatedly applied. It often happens that persons attacked with internal otitis, which may have been very severe at its onset, but has been speedily arrested by general and local depletion, and by the application of blisters, &c. in such cases, especially if the general health has been much deranged for some time previously, relapses frequently recur, not sufficiently acute to demand the abstraction of blood, and yet the pain harasses the patient, *and not infrequently extends to the forehead and back part of the head*. Here is the difficulty of distinguishing whether the membranes and brain are inflamed, or whether merely sympathetically affected; and the mere aurist, in such a case, must be a dangerous counsellor.

Dr. Williams goes on to remark, that abscesses sometimes form in the neighbourhood of the ear, caused by the irritation of diseased portions of the temporal bone, giving rise to symptoms resembling cerebral inflammation, for which they have occasionally been mistaken, leading to the abstraction of large quantities of blood, which has prostrated the powers of the patient, and sometimes induced death. Mr. Burne has mentioned such a case, where abscess was found behind the ear; the symptoms were attributed to phrenitis; active depletion was prescribed, extreme depression was the consequence, from which the patient did not rally, but gradually sank. Therefore it is necessary in all such cases carefully to examine and make pressure over the scalp, more particularly in the neighbourhood of the mastoid processes.

When injections are used, the patient often informs the medical attendant

that, during the night, a clear discharge, like water, took place from the ear, leading the practitioner to suppose that caries exists; but this frequently arises from the injected fluid passing through a *small* ulcerated opening in membrana tympani, into the cavity of the tympanum, and which gradually drains off from the tympanum during the night, owing to the favourable position in which the head is placed for a lengthened period.

Our author very properly insists on the propriety of puncturing the membrana tympani, when the symptoms of abscess in the tympanum are decided and the suffering severe. For delay may lead to much mischief in the tympanum itself, or to extension of the inflammation to the mastoid cells, or even to the internal ear. The membrana tympani generally closes soon after the cessation of discharge.

Loss of the ossicula auditus is a well known consequence of inflammation within the tympanum. The malleus and incus are much more easily displaced than the stapes, nor do they appear to be of the same importance. The whole of the ossicula have come away, and hearing has remained. A scrofulous child had suppuration of the internal ear, with loss of the whole of the ossicula, without injury to the sense of hearing; but generally, if the stapes be lost, deafness follows. When the ossicula are lost, and the immediate connecting medium between the external and internal ear is destroyed, patients hear better when the middle ear is filled with water.

When the tympanum has been destroyed, fungous excrescences frequently spring up, sometimes remaining concealed in the tympanum, at other times making their appearance in the meatus, and occasionally even protruding. The application of the sulphate of zinc will generally check their growth, and sometimes even effect their removal.

Speaking of *otorrhœa*, Dr. Williams says:—Chronic *otorrhœa* is frequently met with in scrofulous children; and in these cases the discharge usually comes from the meatus only, the glands being in a state of chronic inflammation. The discharge is almost always mucous, but occasionally, in severe cases, it is muco-purulent. It will generally run its course until the age of puberty, in spite of remedial means being adopted; sometimes it stops for a short time and then returns. But generally about the fourteenth or fifteenth year the discharge gradually becomes less and less, and is at last altogether suspended. It is better not to be over meddlesome with this affection. If suddenly checked in children, it frequently causes skin diseases, swelled glands in the neck, inflamed eyes, and sometimes brain affections. And the same caution applies to the sudden arrest of discharges from the ear in adults. Dr. Williams relates several instructive cases, calculated to impress this on our minds. The following observations cannot be too well attended to.

“Astringents, which ought *rarely* to be used, are highly dangerous when there is pain in the *head*; and if these injections be persevered in, the brain suffers and death generally follows. This renders the *quack specifics* so dangerous, as they are either composed of astringents, stimulants, or sedatives, each and all being decidedly injurious, when introduced into the tympanum, especially under such circumstances.

A girl had discharge from the ear; a *quack (charlatan)* injected into it an oily liquor, which caused considerable pain; inflammation succeeded, and she died

delirious. Garlic, infused in oil of almonds and coloured by alkanet root, was a celebrated remedy for deafness.

Nothing is more common, when discharge is taking place from the ear, than to order these astringents; frequently without inquiring into *any* of the circumstances of the case. Whilst writing this thesis, I went to a public charity, with the purpose of seeing the treatment adopted in these cases. A woman presented herself, with purulent discharge from the external ear, which was of two weeks' standing; she complained of extreme pain in the head; she was ordered *instantly* an injection of the sulphate of zinc. I was unable to obtain any information respecting her subsequently.

In otorrhœa never use stimulating injections, for their presence has often produced violent inflammation of the tympanum, and even of the membranes of the brain, which has terminated in the death of the patient. In otorrhœa you can never be certain what disorganization has taken place in the internal ear, and therefore no one is warranted in injecting into it such dangerous agents."153.

The treatment that he recommends, judiciously consists of blisters, alteratives, and, in proper cases, tonics.

It occasionally happens, he observes, that the discharge ceases all at once, and this may arise from the meatus externus being blocked up; the matter speedily accumulates, and must be evacuated by breaking down with a probe the incrustations which have formed in the meatus. If dependent upon any internal obstruction, warm water should be gently injected, with the hope of washing it away.

The patient should always sleep on the affected side, to allow the matter by its gravity to drain off from the ear; and the ear should be syringed with tepid water night and morning. In these cases oil should never be introduced, as it speedily decomposes.

After some remarks on *otalgia*, Dr. Williams adverts to *caries*. Fortunately the mastoid process is more subject to it than the petrous. When present, the discharge is always sanious, highly offensive, and frequently discoloured; it stains a silver probe yellow, and very often minute portions of bone become detached, and pass out with the discharge. It is very important not to allow the matter to accumulate; the patient must therefore sleep on the affected side; must syringe the ear daily with warm water. The mastoid process should be frequently examined during otorrhœa, as instances have occurred where discharge has taken place, through the mastoid process, from the cells, and has burrowed under the cervical muscles, occasioning sloughing and death.

Perforation of the mastoid cells has been performed by two Swedish physicians, and there can be no doubt of the measure being in certain cases justifiable, indeed called for.

Inflammation of the brain and its membranes is apt to supervene on caries of the temporal bone. The dura mater in contact with it, inflames, separates from the bone, becomes discoloured, and pus is often deposited between it and the bone, or between it and the brain. The brain, sympathising with this membrane, becomes itself inflamed, and abscess takes place, which may or may not discharge by the ear. But sometimes it is not by continuous spreading of inflammation and its consequences that the brain becomes involved. Where otorrhœa has existed for some length of time, pus has been found in the brain, without any traces of communication between it and the ear being discovered, no caries of the petrous portion existing; so that there

can be but little doubt, that extreme irritation and inflammation of the internal ear, is of itself sufficient to induce inflammation and suppuration of the brain. Dr. Alison has communicated to our author a case where abscess was found in the brain, consequent upon disease of the ear attended with discharge. The petrous portion was sound, consequently there was no communication between the matter of the ear and that of the brain. Dr. Alison has a drawing of the brain of this patient. Dr. Williams adds:—We often find irritation of the brain consequent upon teething; often inflammatory suppuration, depending upon the condition of the mucous membrane in fever; and nothing is more frequent than to find discharge from the ear, dependent upon gastric derangement: showing how great a sympathy exists between the brain, the ear, and the gastro-pulmonary membrane.

On the whole, the practitioner cannot be too much on his guard against cerebral mischief as a consequence of disease of the tympanum or internal ear. He should recollect, however, that neuralgia and paralysis of the face, with conjunctival inflammation, frequently occur independently of any disease of the brain, produced by a lesion of the portio dura. And he should also be aware that large collections of pus sometimes form under the pericranium in cases of severe otitis, leading one to suppose that mastoideal abscess has taken place. The free evacuation of matter will speedily relieve the patient, and very frequently, in the course of a few days, the discharge ceases, the mastoid process remaining perfectly sound.

Affections of the membrana tympani occupy our author next. Inflammation of it is usually the mere extension of inflammation of the meatus or of the tympanum. Laceration of the membrane has followed discharges of artillery—even a box on the ear—the incautious use of the probe—the removal of extraneous bodies from the meatus, &c. The membrane is much more frequently diseased than is generally imagined. Kramer mentions, that out of three hundred patients, thirty-five had chronic inflammation; and in twenty-eight of these it was partially destroyed, of which the practitioners who had previously attended the patients were not aware.

Leeches and antiphlogistic treatment are requisite to prevent thickening of the membrane, or ulceration.

“The *membrana tympani* rarely gives way in the centre, from the pressure of accumulated matter in the tympanum, but generally at one of its edges; in a few days, if the discharge cease, this membrane again closes. Valsalva performed several experiments on the *membrana tympani* of dogs; he ruptured this membrane and dilated it, and in a few days killed the animals, and found no traces whatever of the injury; and could not even discover the cicatrices. If the discharge continue a long time, and especially if the *ossicula auditus* have come away, then the whole of this membrane becomes destroyed; and it is only in very rare cases that an artificial membrane is formed; but occasionally such membranes are produced, either in connexion with, or internal or external to, the *membrana tympani*. In speaking of false membranes covering the *membrana tympani*, Kramer seems to doubt whether they ever exist, and supposes that Fabricius Hildanus is the only person who has seen such a membrane. He imagined that Duverney was deceived, (who observed it in an adult,) by a partial abrasion of the *membrana tympani*.” 178.

Mercury, given so as slightly to affect the system, is the remedy on which Dr. Williams principally relies. He adds:—an aperture in this membrane

does not apparently diminish the power of hearing, and indeed it may be almost entirely lost, and yet partial hearing remain; formerly it was believed that deafness inevitably followed its destruction. When lacerated to any extent, near the attachment of the malleus, the patient is said to be unable to distinguish low or grave sounds.

It is often useful, but not always easy, to ascertain if there is an aperture in the *membrana tympani*. It may be generally seen by allowing the rays of the sun, or the reflected light of an argand lamp, to fall upon it: when in a healthy state it has a *tendinous* appearance, and when there is an aperture it appears as a *dark spot*. When inflamed it has a *dull brown* aspect, and numerous red vessels can be seen passing in every direction. If there is an opening, the lips and nostrils being closed, air passes out of the external meatus when forced from the mouth. The diagnosis may be further assisted by placing the finger gently upon the meatus when, if perfect, a low rumbling noise will be heard. Although simple, this will be found a very excellent mode of diagnosis. The rumbling noise is never heard when the *membrana tympani* is absorbed. If the aperture should be of any size, water and smoke will pass from the mouth, through the external meatus. Whenever the membrane is wanting, wool should be worn in the meatus.

When it becomes necessary to *puncture the membrana tympani*, a sharp-pointed silver probe is generally used, taking care to introduce it in that portion of the membrane anterior and inferior to its attachment with the malleus; or a sharp-pointed bistoury sliding through a canula might be preferred: this would cause considerably less pain if the membrane was much inflamed, as it always is when much pressed upon by an accumulation of purulent matter in the tympanum.

When a permanent opening is requisite, as in obliteration of the Eustachian tube, then a larger and a *circular* piece of membrane should be removed.

Dr. Williams gives the following directions for injecting the ear, when hardened cerumen accumulates in the meatus:—Care should be taken in choosing the syringe, which should not be small, as, although no force should be used, yet moderate power is frequently necessary. A syringe capable of containing two fluid ounces, will be found the most serviceable for washing out cerumen from the meatus. Some persons have recommended a size capable of containing only two or three drachms, but this is manifestly too small for such a purpose. It is important to have a short nosse, as the body of the syringe then forms a *guard* to prevent its entering too far into the meatus. Complicated instruments have been invented, but a common syringe with a short nosse will effect every purpose. It is convenient for those not wishing to increase the number of their instruments, to have a meatus shield fitted to an ordinary two or three ounce syringe. The nosse should not be so large as to completely fill up the meatus, otherwise the pressure might be too great, and laceration of the *membrana tympani* might take place, if the superabundant fluid could not pass out through the meatus. The piston should be pressed upon but feebly at first, and, if necessary, pressure may be gradually increased. If the injection cause *pain*, it should be immediately discontinued. It has been found that warm water dissolves the cerumen more readily than oil; but it has been recommended to drop a small quantity of oil into the meatus, the evening previous to injecting. It

may be necessary to inject several times before the whole of the wax is washed out.

We would observe that hardened wax frequently escapes the notice of the surgeon and suspicion of the patient. We frequently see persons treated for affections of the head or for inflammatory conditions of the ear, in whom the sole disorder is a collection of cerumen in the meatus. We have always found it useful to have oil dropped into the ear night and morning, for two or three days before and after the syringing. A second syringing is generally necessary.

Dr. Williams enumerates the symptoms of *inflammation of the Eustachian tube* thus:—there is great pain in mastication and deglutition; the patient is unable to force air into the tympanum, when the mouth and nostrils are closed: there is constant noise in the ear; the tympanum is generally more or less involved; and if the inflammation run high, the external meatus becomes painful upon pressure. The patient is unable to judge of the pitch or tone of his voice, and speaks in an unusual, and generally very loud key.

The antiphlogistic treatment, and more particularly emeto-cathartics, are required—gargles should be constantly used—and in some cases it will be advisable, as soon as the more acute inflammation has subsided, to inject warm water into the Eustachian tube, as it frequently happens that this tube becomes filled up with thick mucus, which, if allowed to remain, keeps up irritation, and, in the course of time, permanently obliterates this canal.

Dr. Williams makes the following judicious remarks on the operation of *injecting condensed air* through the Eustachian tube into the tympanum—an operation which has become but too notorious.

“It has lately been much advocated by some of our own countrymen; and since this thesis was written, has been rendered but too public in consequence of its injudicious application. That the air acts on the tympanum as a very powerful stimulus is at once evident, from the numerous cases of inflammation which have been caused by its injection. It will require the sanction and experience of honest men, before we can admit of contradictory results to those obtained by M. Itard and others, who have not found it of use in a single case.” 196.

Here we must close our notice of this fresh contribution to aural surgery. Dr. Williams has expended a good deal of labour and research upon the work, but we cannot compliment him on that lucidus ordo, and strict condensation which compilations should display. Practice will improve him, and we hope that a future edition will be characterised by the absence of what are very remediable defects.

A SYSTEM OF PRACTICAL MEDICINE, COMPRISED IN A SERIES OF ORIGINAL DISSERTATIONS. Arranged and Edited by *Alexander Tweedie*, M.D. F.R.S. Octavo, pp. 440. Whittaker, April, 1840.

We have some doubt as to the propriety of the term "*original dissertations*" in the title-page of this work. If dissertations on fever, inflammation, and many other diseases be *original*, they must necessarily omit nine-tenths of the accumulated experience of the medical world, from the days of Hippocrates to the present time. But the fact is that the work under review is a compilation, and a compilation like that of Copland and its predecessor the Cyclopædia, interlarded with the peculiar views of the individual compiler. This observation implies no censure or discredit—quite the contrary. In works of this kind every thing depends on the judgment and industry of the compiler. Neither judgment nor industry will do alone. They must be combined. They can hardly ever be expected, however, in due proportion in the same individual. A high rate of judgment based on experience, often leads to laziness of research—while incessant researches among books often bewilders even the best judgment.

If the succeeding volumes of the "*LIBRARY OF MEDICINE*" keep pace in merit with this first one, we predict that the whole will attain a high reputation and an extensive circulation. We are free to confess, indeed, that in these dissertations, or whatever else they may be called, the materials selected from preceding writers are so well worked up, so amalgamated, and so artfully moulded, as to resemble very much *Original Essays*. The great majority of the writers in this volume stand high in the opinion of their brethren, and though several of them are actively engaged in the exercise of an extensive and fatiguing practice, they do not appear to have spared the midnight oil or the labour of cogitation, in the articles allotted to them. It cannot be expected that we can analyze an elementary work, however artfully cast in the moulds of originality; yet there are more than one or two dissertations in this volume, to which we shall dedicate separate articles, as soon as we can spare space and time.

The "*PATHOLOGICAL INTRODUCTION*" by Dr. Symonds, comprises in the space of 52 pages, a body of valuable facts and observations which, by a practised writer, might have been spread over three goodly octavos, if well swelled out with long quotations. The object of it is to facilitate the study of diseases by exhibiting a brief view of their more simple or elementary forms. There is no doubt that the student is greatly embarrassed on the very threshold of his studies, by numerous terms which require, each, a dissertation rather than a dictionary for explanation. Thus, what idea can be formed of "*congestion*," "*inflammation*," "*hypertrophy*," "*plethora*," &c. without a full explanation of the nature and causes of these states or conditions of the system. One or two extracts will serve as specimens of the manner in which our author has executed this part of the work.

"*Revulsion*" is exemplified in such cases as the following:—congestion of the cerebral capillaries may be removed by congestion in the hæmorrhoidal vessels; subacute inflammation of the bronchial membrane by a cutaneous

eruption; dropsy of the peritoneum by diarrhoea; a spasm of the bronchial fibres by dysphoria, or fidgets. We have known an inveterate asthma which had existed for years superseded by tic-douloureux. Blisters, issues, and setons, are artificial measures intended to imitate the curative operation of one diseased action upon another. Hence they are called revulsives, or counter-irritants. The establishment of a secondary affection to the exclusion of the primary is manifestly the very opposite of sympathy, in which there is a reciprocal maintenance of the diseased conditions. It occurs more frequently in parts of similar anatomical constitution, as when irritation of the skin relieves that of a mucous membrane. We think, also, that the relation is oftener manifested between actions similar in kind: thus a rubefacient is better adapted for the removal of internal congestion than of a suppurative disorder, for which a seton or issue would be more appropriate." 6.

"*Metastasis* is often confounded with revulsion, but it differs from the latter in the fact, that the second action is not observed until the first has disappeared. The name implies change of place; and, at the time of its introduction, the prevalent belief was, that when a disorder changed its seat, a morbid matter had been transplanted from one part to another. The subsidence of a cutaneous eruption may be followed by inflammation of the bronchial membrane, and a similar relation may be observed between the latter and inflammation of the mucous surface of the intestine. The sudden cessation of hæmorrhoids may induce disorder of the brain, such as a transient giddiness, or a fatal apoplexy. *Metastasis* is observed to occur more frequently in some diseases than in others, as in the instances of gout and rheumatism flying from part to part.

The pathology of these affections is somewhat too complicated to be entered upon at present. We must content ourselves with stating what we consider to be the law of *metastasis*; namely, that the liability of a disease to *metastasis* is in an inverse ratio with its dependence upon local causes; whence it may be inferred, that the occurrence implies a fault in the general system. In a plethoric subject, the removal of a determination of blood to a particular part by means which do not reduce the quantity of nutritive fluid, is very easily succeeded by similar disease in some other organ. Congestions dependent upon irritability of the nervous system are likewise migratory. We shall find the principle of very extensive application in pathological inquiries. There are cases, however, in which the cessation of a purely local affection is almost certainly followed by disease elsewhere. We allude to those in which a disease has been so long fixed in an organ as to have become a sort of necessary function to the whole system, or in which other parts have gradually become accommodated to it, so that upon its removal the harmony is again disturbed. Thus an ulcer may have existed so long that either the whole quantity of the blood, or the relative distribution of it to the several organs, has been adjusted to the action on the morbid secreting surface. The healing of the ulcer is, therefore, very likely to cause excessive determination to some internal organ; and that such events often take place in this order is matter of every day's experience." 7.

The author then proceeds to consider "diseases of the capillary system," under the heads of "disordered circulation"—"diseased secretion"—"diseased nutrition"—"diseases of the blood"—ending with "diseases of nerves and contractile fibres"—all of which important subjects, he handles in a very masterly manner. The language is so terse, and the reasoning so close, that the condensing cylinder of the most practised analytical reviewer would be utterly foiled in any attempt to compress the matter into smaller space. One more specimen is all that we can offer from this very clever introduc-

tion. Although the subject of "inflammation" occupies 61 pages of the work itself,—and that from the pen of Dr. Alison, yet the following graphic sketch of this foundation of almost all diseases, comprises nearly the whole of what we know respecting its elementary nature.

"Inflammation consists not only in engorgement of the capillary vessels of the part, but also in the arrest and coagulation of the circulating fluid. It occurs under circumstances precisely similar to those which favour or produce congestion; and, in fact, the latter is the incipient stage of inflammation, though it may also exist (as we have seen) as a separate lesion. Inflammation moreover may be divided, like congestion, into active and passive, according to the mode of its production, and to the symptoms which accompany it. Congestion is apt to be converted into inflammation, when its causes act with great intensity, that is, 1. when the blood is attracted in so overpowering a quantity that the ordinary powers of the capillary circulation are unequal to the disposal of it; 2. when the vitality is so low that the motion is not only retarded, but suspended; and, 3. when the venous obstruction is so considerable as to have the same effect. Inflammation is also more likely to occur when the accumulation has not been relieved by the exudation either of blood or of serum, nor by an increase of the normal secretion of the part.

The process of inflammation has been carefully observed by the aid of the microscope; and these are the principal phenomena:—At first, the globules of blood are seen upon the application of the stimulus to move more rapidly, and the currents are somewhat smaller in diameter; but this is soon succeeded by dilatation, and near the point of irritation the motion is slower. In the surrounding parts blood begins to accumulate, and there is a general afflux from the more distant points of the reddened surface to the point of irritation as a centre. At this time the particles may be seen to flow in a direction retrograde to the usual course, and to find channels not previously observed. The next and most important phenomena are the stagnation of the blood in the central part, its coagulation, and the disappearance of the globules in a confused mass. Inflammation is now established; the colour of the part varies, according to the stage of the process, from vivid red to dull crimson or black. The arteries leading to the spot are more distended than usual; and they have been proved by Dr. Alison to lose much of their tonic contractility. The veins leading from the inflamed member yield a larger proportion of blood than those of sound parts.

It has been long a warmly disputed question, whether inflammation is to be regarded as increased action. The facts just detailed are obviously quite incompatible with the notion of increased action (*i. e.* contraction) of vessels. But if increased action refers to the quantity of blood in the tissue, and to the state of the neighbouring parts, it certainly must be predicated of inflammation. The great afflux of blood, the heightened colour, the augmented bulk, the exalted sensibility, the increase of temperature, the throbbing arteries and distended veins, not to mention the subsequent products of serum, fibrin, and pus, present a collection of phenomena which it is difficult to separate from the idea of increased action or commotion; but it is quite certain that there is weakened action of the vessels, with diminished function of the tissue. As inflammation will be treated of more at large in another portion of this work, we have only attempted to say as much as seemed requisite for pointing out the relations of this with other pathological conditions." 18.

The subject of "INFLAMMATION" in all its details, has been assigned to Dr. Alison, and we need hardly say that few men could treat the subject with greater ability. Having exhibited an extract containing an epitome of the theory of inflammation, we are here tempted to introduce another, and a longer one, discussing the pros and cons respecting our great remedy for the

disease—namely bloodletting. The “cautions” here detailed, are well worthy of attention from old and young practitioners.

“ But the principal cautions which it is necessary to keep in mind, as to the use of bloodletting in inflammatory diseases, have reference, not simply to the subsequent effects of the evacuation on the system, but to the alteration to be expected from it on the progress of the existing disease; and in this view we must always carefully attend—1. to the *period of the disease* at which we are to use the remedy; 2. to the kind of the inflammation; and 3. to the complication which may exist of inflammation with other diseases.

1. When we say that the period of the disease, even in cases of healthy inflammation often decidedly contra-indicates, and still oftener makes us doubtful as to the result of bloodletting, we do not mean merely the number of days from the first decided attack of the disease (although that always demands attention;) but we must attend particularly to the proofs of effusion or disorganisation consequent on the inflammation, having already made such progress as to indicate that the alteration of structure already effected, rather than the alteration of action which leads to it, demands our chief attention. And in general, as already remarked, this may be apprehended when we see a *manifest change in the constitutional or febrile symptoms*, attended with *continuance or increase of the local symptoms*. When the pulse has become slow or irregular, at the same time that the pain of head has passed into delirium or coma, in phrenitis or hydrocephalus; when it has become soft and compressible, or very frequent, or when the fever has taken the form of hectic, in inflammations within the chest, while the cough, or the dyspnoea has continued and increased; when rigors have supervened on hepatitis; when a soft and compressible, or very frequent pulse, and cold sweats have taken place in enteritis, without relief of the bowels or abatement of the tenderness of the abdomen, thoracic respiration, and vomiting; we may always suppose that effusions have taken place to a considerable extent, and that if the inflammation exciting them has not subsided, at least the febrile reaction by which that inflammation had been supported, and on which bloodletting could exert its chief powers, has so far abated, that the time for active depletion is nearly over. If recovery is possible after this period, a long and slow process must be gone through before it can be perfected; and this will require a certain strength of vital action, and may be frustrated by any means which further depress the vital powers; nay it may, in many instances, be obviously promoted by means which excite the system generally, and stimulate and strengthen the circulation.

In many such cases, more definite information is attainable, particularly in the case of inflammation within the chest, whether affecting the bronchiæ, the substance of the lungs, the pleura, the pericardium, or inner membrane of the heart,—the indication given by examination of the chest and of the sputa, and by auscultation and percussion, prove the extent of effusion, and the degree in which the play of the lungs or heart is impeded by it; and these, taken along with the state of the pulse, heat of skin, and general strength, may often enable us to speak with much confidence as to the question,—always presenting itself in the advanced stage of these diseases,—whether there is more danger from weakening the circulation by bloodletting, when such impediments to the action of parts within the chest already exist, and can only be remedied by a slow natural process of absorption, or from allowing such inflammation as still exists to go on, unchecked by farther loss of blood.

2. That inflammation may exist, of a nature not to be subdued, even to be aggravated, by bloodletting or other evacuations, is quite certain from such experiments as those of Magendie as to the eye, and of Gendrin as to the stomach; in which the kind of inflammation of mucous membrane formerly mentioned was brought on by inanition, and could only be relieved by fuller nourishment,

restoring the strength of the circulation, and probably restoring to the mucous membrane its natural protecting mucus; and that the kind of inflammation which is recognised in a patient affords very often a reasonable ground of objection to full bloodletting, is sufficiently obvious when we attend to the known history of scrofulous, rheumatic, and gouty inflammation. In the first of these, it is true, that on occasion of a recent inflammatory attack, when the symptoms approach most nearly to those of healthy inflammation, we have every reason to believe that bloodletting is often of the most essential importance, preventing aggravation of disease already existing, or arresting disease which would otherwise be established. But it is equally true that scrofulous inflammation is less under the influence of bloodletting than healthy inflammation; and farther, that scrofulous diseases occur chiefly in weakly persons, in those whose mode of life in early youth has been debilitating, and in those recently weakened by any considerable evacuations. Therefore, by full and repeated bloodletting in scrofulous cases, while we make little impression on the inflammation that exists, we incur a great risk of so far lowering the constitution as to make it more liable than previously to fresh attacks of inflammation, or to other scrofulous diseases, perhaps not inflammatory in their origin.

Again, the recorded experience of all ages informs us (whatever we may conjecture as to the explanation of the fact) that the inflammation both of rheumatism and of gout is very liable to metastasis, and that, although it may often be moderated (particularly that of acute rheumatism in a healthy constitution) with very good effect by evacuations, yet it is by no means desirable that it should suddenly recede from the extremities; because if it does, inflammation in a more vital organ, or in the case of gout, a kind of internal neuralgia, even more immediately dangerous, is very likely to follow.

In the case of erysipelas, to a certain degree, and in that of all the specific inflammations of the skin already noticed, in a much greater degree, the nature of the inflammation may also be urged as a reason against full bloodletting, and in favour of the strictly 'expectant practice;' but these are cases either of inflammation without fever, or of inflammation complicated with another and generally more formidable disease, falling therefore under the next head.

3. The complications of inflammation which often contra-indicate bloodletting, and always impose the necessity of caution in regard to it, are in a general view of two kinds; that with other febrile and particularly contagious diseases, and that with chronic and particularly organic diseases.

In regard to the complication of inflammation with idiopathic fever or with the contagious exanthemata (in which we include erysipelas), the general principle is, that such inflammation, whether of the kind that is essential to and characteristic of the disease, or of that which is only an accidental concomitant, is never the sole, and seldom the chief, cause of danger. The body is under the influence of a poison, generally absorbed from without, which gives a peculiar character to the inflammation, and likewise excites a peculiar form of fever, often very dangerous when the inflammation, external or internal, is trifling. In the course of the disease, the poison, after being enormously multiplied, by some mysterious process, is expelled from the body. Whether the inflammation is part of the process by which this expulsion is effected, is indeed doubtful, but it is certain, that in most of these diseases, the inflammation, at least that which is characteristic and peculiar to the disease, cannot be prevented from running a certain course without imminent danger to life.

The danger in the course of these diseases depends often mainly on the depressing effect of the morbid poison, gradually influencing the system at large and especially the fundamental function of circulation, and producing typhoid fever; but it often depends on the combination of the depressing influence with inflammation, internal or external; and sometimes it depends so much on the intensity of the inflammation and so little on any general depression of the

powers of life, that the disease demands and bears evacuations nearly as in idiopathic inflammation. In judging of the degree in which the danger of individual cases depends on the one or the other cause, there is of course much room for the exercise of judgment and discretion. One general observation may be made, which is of great practical importance, that in all such complex cases, where contra-indications exist, if bloodletting is to be practised (and in the accidentally concurrent inflammations in many cases of such diseases it is highly beneficial), it should be practised as early as possible, in order that it may be as small as possible; all experience informing us that a very moderate loss of blood in the early stage of inflammation will often produce much more effect on the extension and course of the disease than a much larger quantity at an advanced period.

There is another element which must always be taken into consideration here, which is quite peculiar to such diseases, viz. the nature of the prevailing epidemic; for it is the general result of the observation of medical men in different ages, that, in different epidemics, the type of the same disease so far varies, that the local inflammations may be more frequent and dangerous in the generality of cases occurring in one, and the general typhoid state in those occurring in another. Thus it is the general result of the experience of the present writer and, he believes, of most practitioners who have seen much of the epidemic fevers prevalent in Scotland from 1816 till 1820, and again of those prevalent since 1826,—that bloodletting was both more demanded from the firmness of the pulse and the urgency of local symptoms, and better borne at the former time; and that the danger much less frequently depended on mere depression of the circulation; and again, that, in the latter epidemics, this last part of the symptoms has been much more generally urgent, the use of stimulants has often appeared much more important and beneficial; and that full bloodletting, even early in the disease, has often appeared to exert a very injurious influence over its subsequent progress. Similar observations have been made on different epidemic visitations of all the febrile and contagious diseases.

Of the caution in regard to bloodletting which is imposed by the presence of chronic, and especially of organic disease, we may merely enumerate the cases of inflammation of the lungs or bronchiae combined with disease of the heart, or with previous long-continued asthmas and its usual attendant, emphysema of the lungs; and again, of inflammation within the abdomen, whether of the serous or mucous membrane there, combined with organic disease of the liver. Such cases are very common, and are very often farther complicated with dropsical effusion, partial or general. It is very important to be aware, and has been ascertained of late years more distinctly than formerly, that none of these complications ought to prohibit bloodletting when the inflammatory symptoms are recent, and the circulation tolerably firm and vigorous. But it is obvious that, in such cases, the system is permanently under the influence of a cause which prevents it from recovering its natural strength after any great evacuation, as it otherwise would do. And in several such cases, a more special cause of danger from much loss of blood may be pointed out, particularly in the cases of advanced bronchitis and emphysematous lungs, in which free expectoration is both difficult and necessary for recovery; and the cases of dropsical effusion, where a mechanical impediment exists either to free circulation or to the expansion of the lungs. It is obvious, from these considerations, that the time during which bloodletting can be beneficially employed in such diseases must be very circumscribed; although it must be admitted, on the other hand, that some cases of all these occur, in which the strength of the circulation is such as to make it safe and beneficial at a much more advanced period than in others. The case of mechanical obstruction to the flow through the heart, from disease of its valves or of the aorta, unconnected with organic alteration either of the

lungs or liver, is that in which the repeated loss of blood may generally be best borne.

Much has been said, in some systematic works, of age, sex, temperament, habit of body, habits of life, climate, and season, as influencing the use of this remedy; but the fact is, that there is no age, no sex, temperament, or habit of body; no description of human beings, and no climate or season, in which bloodletting may not, on certain occasions, be performed with advantage,—nay there is none in which its neglect may not be fatal. All that can be said on those heads is chiefly important as pointing out the circumstances in which the indications or contra-indications already stated are chiefly to be expected, but can hardly be said to establish any new rules." 108.

The great class of fevers is then entered upon, Dr. Christison leading the van, and treating of the "general doctrines of fever"—and of "continued fever," when Dr. Shapter breaks the chain, rather abruptly, and interposes "PLAGUE" between continued and intermittent fevers. We think the disease might have fallen in more naturally among the eruptive fevers, than where it is now placed. This, however, is of little consequence. The article on "continued fever" is a very laboured and erudite one, as might have been expected from the pen of Dr. Christison; but there is not—indeed there cannot be, much originality. The criticisms on the opinions of others, however, are candid, and generally correct. We must pass over, with commendation, the papers on "PLAGUE"—ON "INTERMITTENT FEVERS," and on "REMITTENT FEVERS," in order that we may take more particular notice of a short essay on "infantile remittent gastric fever," from the practical pen of Dr. Locock. This section makes no pretence to erudite researches among books; and we like it the better on that account, as it makes up at least in originality for the deficiency of book-worming.

This disease has received many names from different authors, according to the theories which they had adopted, or the prominent symptoms which they had observed. The worm fever—mesenteric fever—stomach fever—infantile remittent, &c. are among the chief designations.

"On a careful examination of the history and symptoms, as given by various authors of former and recent times, we are satisfied that much confusion has arisen, sometimes from imperfect attempts to separate into distinct diseases what are in fact but early and later stages of the same, and on the other hand, from an opposite error of confounding what are accidental complications, with what may be considered as the regular and simple form of the complaint." 277.

Dr. Locock thinks that the doctrine of Broussais receives *apparently* "a striking confirmation," in the acknowledged cause of the complaint under consideration. But this confirmation is only *apparent*. Because inflammation of the mucous membrane of the stomach and bowels will cause fever, it does not logically follow that *all* fever depends on this one cause. Inflammation of the cerebral membranes will just as readily produce fever, as that of the gastro-intestinal, and this fact has seemed to afford a striking confirmation of the doctrine of Clutterbuck; yet the profession has some doubts on the subject still. The fact only proves that unity of causation in fever is just as much the "baseless fabric of a vision," as "unity of disease" itself in the brilliant hypothesis of our friend Dr.

Dickson.* This, indeed, is wisely acknowledged by Dr. Locock himself, who limits the soundness of Broussais's doctrine to this one form of fever—"infantile gastric."

For all practical purposes Dr. L. thinks the division into *acute* and *chronic* will be sufficient. The disease indeed is more uniform than almost any other kind of fever. The description of Dr. Butler applies to the disease as closely now as it did "sixty years since." The following graphic delineation of a single paroxysm we shall quote entire.

1. "*Symptoms of the acute form.* It is not in earliest infancy that this disease is most commonly met with—indeed, many have denied its existence in children during the period of lactation. It is most frequent from the age of two to six, but preserves its peculiar character up to the age of puberty, though, the older the child grows, the less marked are those peculiarities of type. In the *acute* form, the symptoms often come on very suddenly. The child perhaps goes to bed apparently as well as usual, and in an hour is found with a burning skin, a flushed countenance, an injected eye, and a very rapid pulse, varying perhaps from 120 to 160. There is intense thirst, with a dry tongue, which soon becomes coated and covered with a thick white fur; the child is restless and wide awake, often delirious, but able to answer questions or do as directed. If old enough, the child often complains of pain in the head and sometimes in the abdomen, the parietes of which are generally more hot than any other part of the body; indeed, the feet are often cool or cold. There is occasionally sickness and vomiting of sour and offensive, or of greenish or yellow fluid. If the proper remedies be used, in a few hours the skin becomes cool, perspiration breaks out, the tongue is found to be moist, the pulse softer and more quiet, the child falls into a deep and refreshing sleep, and on awaking appears nearly as well as the day before." 278.

Such a speedy and favourable termination, however, can only be expected where the cause was one improper meal, and where the irritating cause is expelled by nature or art. It is rare to find the cause so limited, and the issue so prosperous. Accumulations of improper or of undigested food in the digestive tube will induce a succession of paroxysms, formed only by remissions, instead of intermissions. There is languor and restlessness in the morning, with moist but coated tongue—cool but dry skin—quick pulse—frequently drowsiness, loss of appetite, scanty and high-coloured urine. Towards evening, all the symptoms are exasperated, running the same course as before, and followed by the usual remission. Sometimes there is diarrhoea—sometimes constipation; but in either case the secretions are depraved, and the faecal resembling that of putrid meat.

"They are dark, pitchy, or clay-coloured, with little or no admixture of bile, or the biliary secretions appear vitiated and unmixed with the general mass. When the bowels have been previously confined, the accumulation of morbid secretions is usually enormous, and dose after dose of active purgatives is necessary to dislodge the offensive load. After the bowels have been cleared out, the dejections are still highly fetid, dark, and slimy, and their character is found to improve with the subsidence of the febrile accessions. In the course of the disease the breath early shows a faint and often an offensive odour, the coat on the tongue becomes more yellow or dirty, and the child is noticed to be frequently

* By the way, Dr. Dickson has placed a very appropriate heading to the title-page of his book—"FALLACIES of Physick."

picking its lips, its nose, the corner of its eyes or its fingers. There is also not uncommonly a short hacking cough. As convalescence approaches, the paroxysms of fever become less marked, take place at a later hour, and last a much shorter time. The intervals of remission are longer, and are indeed almost complete intermissions, the child becoming more lively, returning to its natural habits, and recovering its appetite and strength. In other instances the disease does not come on so suddenly. For a few days the child is heavy and fretful, with disturbed sleep, loss of appetite, and coated tongue; the febrile accessions are very slight and irregular, but go on increasing in length and severity, till the more decided symptoms appear, and run a similar course." 278.

The duration of the acute attack varies from a few hours to a week or a fortnight, after which it gradually subsides into a chronic form, and is then often protracted. The improvement of the secretions is one of the earliest signs of recovery; but for some considerable period a very trifling error indeed will induce relapse:—or neglect of the bowels, too early use of tònics, exposure to damp, or to over-exertion or excitement, will do the same. Violent purgation or drastic purgatives will induce relapses, as well as inattention to the bowels.

The disease is not so entirely void of danger as Dr. Underwood pronounced it. Complication with dysentery or acute inflammation of the bowels will occasionally render the disease fatal.

"The dysenteric complication is indicated by the appearance of the evacuations, which are frequent, attended with violent straining, consist almost entirely of mucus, and are often mixed with blood; while the acute pain in some part of the abdomen, increased on pressure, with retraction of the limbs, early tympanitis, and tendency to constant sickness, indicate the existence of intestinal inflammation. In the acute stage of these complications, the peculiar fetor of the evacuations soon ceases to be constant, and often entirely disappears; but it returns again after a time perhaps, notwithstanding that the inflammatory state of the intestinal mucous membrane has subsided. By the majority of practitioners in this country, however, this absence of fetor of the stools in the progress of the acute form of infantile remittent fever is not considered to be at all uncommon, and they are unwilling to admit the existence of inflammation in such cases. The presence of pain, on the other hand, is by no means a necessary proof of the existence of inflammation, and the tenderness on pressure is often deceptive, as young children, in the fretfulness of disease, are exceedingly impatient of any sort of disturbance, and evince great dislike to pressure on the abdomen or any part of the surface. We must not lose sight also of the fact stated by Andral and others, that even the most severe and fatal forms of intestinal inflammations are often painless." 279.

The etiology of the acute form is traced, directly or indirectly, to "disorder of the digestive organs."

The Diagnosis is sometimes false, from confounding the simple fever itself with some of its consequences or concomitants, as worms, gastritis, enteritis, tabes mesenterica, hydrocephalus, &c.

Treatment.—When early consulted, Dr. L. prescribes an emetic, especially if there be sickness of stomach. Next morning it will be prudent to administer a smart purgative of calomel, jalap and scammony, or castor oil, senna, or salts, &c. according to the age and constitution of the patient.

"Should the time for an emetic have gone by, from the number of hours which have passed before our assistance is required, we may begin at once with the purgatives, but then it will be generally found necessary to give the calomel alone in the first instance, on account of the irritability of the stomach rendering it difficult for the child to retain medicines which are nauseous or in large quantity, but following it up a few hours after with some other purgative." 282.

Enemata, and the warm bath (if much restlessness obtain) are recommended by Dr. Locock, together with effervescing saline draughts and nitrate of potash. As long as the motions are unhealthy, there will be a recurrence of the fever; but when the secretions begin to assume a natural appearance, we may give the little patient a temporary respite from physick, while meantime the nourishment should be entirely fluid, and unirritating, consisting of farinaceous decoctions, rennet whey, &c.

"It is always necessary to inspect the evacuations, instead of trusting to the report of the nurse. The state of the abdomen on pressure, as to fulness and hardness, must be also attended to, and we should closely watch the indications of pain or tenderness. The fulness and hardness, distinct from collections of air, which are easily detected by percussion, will denote the necessity of following up the use of active purgatives, which may be continued at sufficient intervals, so as not to harass and exhaust the patient, till we are satisfied that the intestines are emptied." 283.

Abdominal tenderness indicates caution in the use of purgatives, unless of the mildest kind, as castor oil or neutral salts—small doses of calomel being combined with hemlock or henbane, and given more frequently.

"The abdomen should now be fomented, and if the pain increases and becomes constant, and the febrile symptoms more permanent, there will be no doubt as to the propriety of applying leeches, which we have found more salutary than general bloodletting. The number of leeches, and the repetition of them, must of course be adapted to the strength and age of the child, as well as to the severity of the symptoms. Many have urged that the disease is so exhausting and so liable to be protracted, that abstraction of blood should be avoided; but it will generally be found that active treatment, pursued judiciously in the early and acute form, will be most likely speedily to arrest the symptoms, and prevent the exhaustion consequent upon the more protracted or chronic form. As the symptoms subside, smaller doses of the remedies recommended may be employed; at more distant intervals, and when the secretions have become healthy, the tongue clean, and the fever subsides, it will be sufficient to give a gentle dose of rhubarb with magnesia or sulphate of potass every other day. At this time the power of the digestion may be assisted by a light vegetable bitter, with ammonia or the other alkalies, twice or three times a day; and we have much confidence in the mineral acids, and especially in Meynsicht's vitriolic elixir (an imperfect ether, formerly much in repute in atrophy and consumption), in doses of from five to thirty drops, according to the age of the child. As the appetite returns, the diet may be slowly and cautiously improved; but it must be always recollected that the slightest excess or carelessness, or any neglect in the management of the bowels, will be likely to be followed by a relapse." 283.

2. *The Chronic form.*—This either succeeds to the acute form, or creeps on slowly and insidiously, from causes similar in kind though slighter in degree, than those which lead to the acute fever. Long habits of indulging in improper food—swallowing it too fast—inattention to the bowels—ex-

posure to damp—and insufficient exercise, are the most prominent causes of chronic gastric fever. Butter believed it to be epidemic and contagious; but the latter supposition is now clearly exploded. It often succeeds to certain infantile diseases, as whooping-cough, measles, scarlatina, &c. &c.—probably in consequence of the gastro-intestinal derangement produced by them. The symptoms resemble those of the acute disease, except that they are milder in degree, and less marked in their character. Although the paroxysms are less intense, they are longer in duration, and the intervals less free from irritation. The faecal accumulations are less in bulk, and the faeces less offensive; but still the secretions are rarely natural—the abdomen is hot, and sometimes tender to the touch, as well as tumid from flatulence—the tongue furred in the middle, but red and angry at the sides—teeth covered with sordes—lips parched—skin harsh and dry, and ultimately wrinkled from emaciation—urine scanty and high-coloured, with white sediment—breath offensive—frequently a hacking cough, with picking of the nose, and indeed of every part of the body.

“ In the advanced stages the fretfulness of the child is often most distressing, or sometimes it lies for hours taking little or no notice of any thing, and either apparently dozing with half-closed eyes, or when roused immediately resuming the incessant picking. At this period the appetite is very often craving, and the child evinces great irritation and distress on being denied food. In other cases there is urgent thirst, but the appetite is lost; in others, again, there is neither appetite nor thirst, so that there is great difficulty in getting the child to swallow any thing, from its dislike to be disturbed. In the still more severe cases there is generally some complication, either diarrhoea or dysentery, when the mucous lining of some portion of the intestines is found either softened, abraded, or the intestinal follicles enlarged and in various stages of ulceration. It is still more common to find that mesenteric disease is excited by the extension of the irritation to those glands; when this happens the abdomen is hard and tumid, and the enlarged glands may often be felt through the parietes of the abdomen. This complication is more apt to occur where there is a scrofulous taint, and in such constitutions tubercular disease in the lungs occasionally supervenes. Instances of death without one or other of these complications are rare, and even when the child appears to be reduced to the lowest degree of emaciation and debility, by proper treatment recovery may be effected.” 284.

Treatment of the Chronic form.—Most of the remedies for the acute form are necessary in the chronic; but they must be administered with much more caution, and in much smaller doses. Active treatment in chronic diseases is productive of much mischief in the sick room. In this form of the complaint drastic purgatives are too often employed, and the consequence not unfrequently is, that irritation is converted into inflammation, or the chronic form into the acute—with dysenteric symptoms and bloody stools.

In other cases, softening of the mucous membrane takes place, and ulceration follows.

“ If, in the first instance, we have reason to suspect accumulation in the intestines, an active purgative, containing calomel, may be safely and advantageously administered; nor is there any objection to have such more powerful medicine occasionally repeated, especially if, by any error of diet or negligence in the management, a relapse or an increase of the symptoms have taken place.

But after the purgatives have sufficiently cleared the bowels, the secretions will be best improved by milder remedies: mercurials in gentle doses, especially the Hydrarg. cum Creta, or calomel rubbed down with chalk, should be given every night, or every other night. A combination of the mercurial with the diaphoretic, particularly ipecacuanha, or, if much restlessness, with Dover's powder, will be found very useful. A mild purgative on the following morning, such as castor oil, compound decoction of aloes, rhubarb and magnesia, or rhubarb with sulphate of potass will be necessary. Denman, Underwood, Butter, and Pemberton, have all spoken highly of this latter preparation, considering it peculiarly adapted to meet the indications by relieving the fever, improving the secretions, and quickening the action of the bowels and kidneys. The quantities must of course be adapted to the age and strength of the patient, but from two to three evacuations will be desirable daily; a larger number will exhaust the child, and fewer will scarcely keep the bowels sufficiently free from offending matters. Saline medicines at intervals will also be beneficial; and the addition of henbane, hemlock, or lettuce, has been found by most practitioners to allay the general irritation, compose the restless distress of the child, and render the action of the remedies more genial. Frictions with oil over the abdomen, or with slightly stimulating lotions, will often be of use, and we have especially observed advantage from the nitro-muriatic acid largely diluted. A nightly warm bath should not be omitted; it promotes perspiration, and relieves the mucous surface, besides composing the child, and contributing to its comfort.

The diet during the early treatment should be such as will most easily assimilate, and will be least likely to produce irritation, if only partially digested; for this purpose we may allow chiefly barley-water, rennet whey, thin arrow-root, or other farinaceous gruels, and weak chicken or veal broth. When there is thirst, soda-water or toast and water, or slightly acidulated beverages, may be taken." 285.

When all febrile symptoms have subsided, the tongue has become clean, and the secretions healthy—and not till then, should the mildest tonics be used. Dr. Locock recommends the mineral acids, as infusion of roses, to which some of the neutral aperient salts may sometimes be added. We are partial to the bitter infusions with soda. It is only after decided convalescence has set in that the more powerful tonics can be safely employed. Great care is necessary in respect to diet for weeks or even months after recovery, since relapses are very apt to recur from the most trifling irregularities. We need hardly add, in taking leave of this article, how much it speaks for the practical judgment and experience of its author.

The subject of "HÆMIC FEVER" is briefly but judiciously treated by Dr. Christison—"Small Pox" is ably handled by Dr. Gregory—and Measles and Scarlatina have been allotted to Dr. George Burrows, who has discharged his duty well. In "PUERPERAL FEVER," Dr. Locock again comes on the stage, and, in the brief space of nineteen pages, has discussed a "quæstio vexata" that has occupied many ponderous volumes, and called forth the acerbity and odium medicum of many eminent physicians and surgeons.

"On perusing the numerous treatises that have been published within the last half century on this highly important class of diseases, the reader must necessarily be struck with the very extraordinary difference of opinion amongst the several writers as to the history and nature of the disease, the symptoms, mode of treatment, and the result of the practice adopted. The only point on which

all seem to be agreed is, its great and striking fatality, and that it is one of the most serious, intractable, and destructive maladies to which puerperal women are liable." 348.

Dr. L. thinks that all these discrepancies may be easily reconciled, without attributing "*mala fides*" to any author. Each has described what he has seen—but they all saw different forms or shades of the same disease—and hence their clashing delineations. From Dr. L.'s observations and researches, he is not inclined to subscribe to the doctrine that connects puerperal fever with local inflammation. But even if this doctrine were admitted, we should never be able to trace the inflammation to any one locality in all cases—which is, indeed, the case with all other fevers.

"In considering puerperal fevers it has long been our conviction, that what has been called by Sydenham *the constitution of the year*, has been too much lost sight of. The great difference in the accounts of puerperal fevers by different writers is thus easily explained." 349.

Dr. L. treats the disease under five heads—1. Acute Puerperal Peritonitis.—2. Adynamic, or Malignant Puerperal Fever.—3. Puerperal Intestinal Irritation.—4. False Peritonitis.—5. Milk Fever. Our closing limits prevent us from more than glancing at the third head. Puerperal intestinal irritation is by no means a rare form of the disease under consideration. It is of great consequence to distinguish it, for a mistake in the diagnosis may be of serious consequences. It is not, in itself, inflammatory; nor does it *necessarily* lead to inflammation. To treat it for inflammation, which is too often done, may risk the life of the patient. It is a frequent *cause* too, of other forms of puerperal fever, and not seldom *accompanies* them.

"At any period after delivery, where the bowels have been previously neglected or mismanaged, this affection may come on. The symptoms are more gradual in their progress at first; there is general uneasiness, scarcely describable by the patient, often for some days before the more marked symptoms make their appearance; the appetite fails; the tongue becomes coated with either a creamy, or a dirty white; the skin is over cool for part of the twenty-four hours, and that state alternates with irregular febrile heat, accompanied often with headach, and generally a quick pulse; there is frequently deep-seated uneasiness in the abdomen, which is full and rather tense, often rather tender to pressure, but not generally to firm steady pressure; there is a frequent feeling of sickness, and often vomiting; sometimes this vomiting is profuse and incessant, and the fluid ejected is dark and offensive; in many instances this is thrown off the stomach with little or no effort, but apparently from the effect of flatulence. A very common symptom, more especially after the first day or two, is diarrhoea; the evacuations are dark, fetid, watery or slimy, with much flatulence, fetor of the breath, and increased abdominal tenderness; the pulse increases in rapidity; the exacerbations of fever are of longer duration, and attended with great prostration of strength and feeling of despondency; the tongue indicates subacute gastric inflammation—it is sometimes white in the centre with florid edges and tip, the bright red, angry-looking portion suddenly emerging from the border of the white coat; at other times the white or yellow coat entirely disappears, and the whole tongue is left morbidly red, shining, and glossy; in some cases perfectly glazed; in others it is rough, and as it were scalded, the mucous membrane of the mouth being at the same time often covered with aphthæ. The strength of the patient rapidly diminishes under the exhausting diarrhoea and the continual or irregular fever, and death is generally preceded by some of the symptoms of the other forms of puerperal fever. Many

of these cases are treated by bleeding, on the supposition that they are inflammatory, but bleeding only aggravates the symptoms. They are also more likely to arise after labours which have been unusually protracted, or where uterine hæmorrhage has occurred to a great extent. In the latter instances, besides the symptoms described, there is much affection of the head; acute pain, with strong pulsation in the centre, confused noises, want of sleep, low delirium, and constant restlessness. In spite of the palpable cause of these distressing sensations, it is by no means uncommon to find this form of child-bed fever mistaken for vascular plethora, and the temporary relief to the head, obtained by the local abstraction of blood, has often led to a repetition of exhausting remedies." 362.

In several fatal cases Dr. L. observed the entire absence of all organic changes. There was much flatus in the intestines and stomach—all the tissues being pale and bloodless, with venous congestion in the brain. In some of the more protracted cases, attended with diarrhœa, there was ulceration of the mucous membrane of the bowels.

"It is most important to detect this form of mischief early, and to distinguish it from the more formidable conditions of the puerperal state. They are, however, so often blended or complicated, as to increase materially the difficulty. When uncomplicated, the chief points to be noticed are, the insidious character and slow progress of the symptoms, the state of the tongue, and the condition of the secretions. The absence of acute pain and tenderness is not much to be depended upon, as it has been already observed that those symptoms are not always present in the peritoneal fevers. The irritable state of the tongue, the peculiarly foul and offensive evacuations, and the subsequent diarrhœa, when existing along with the signs of inflammatory mischief in the abdominal or pelvic cavity, whether of the sthenic or malignant character, are all to be taken as evidences of the complication of this state of intestinal irritation with the genuine puerperal fever." 363.

Dr. L. limits his observations on the treatment to the simple form of *irritation*, uncomplicated with inflammation. The first indication is obviously to clear the bowels of offending matters—to improve the secretions—and to sustain power without increasing fever.

"When we are called to such a case early, a full dose of calomel, James's powder, and opium, may be given, followed in four or five hours by castor oil, which is generally the most efficient and the least irritating purgative. If there be much sickness, so that such remedies will not be retained, from five to ten grains of calomel alone will almost always allay the vomiting; after which a large enema of gruel and castor oil may be injected. Several successive doses of purgatives will generally be required to remove the scybala and offensive accumulations from the intestines, and a change of purgative will frequently accomplish this, when the first has latterly brought away nothing but watery motions. The repetition of the purgatives must depend on the strength of the patient and on the effect produced, the full state of the abdomen, when felt by the hand, being our guide as to the existence still of an unremoved load. When diarrhœa is an early symptom, or at least has begun before we see the patient, we shall do little good in our efforts to restrain it, unless we give these active purgatives. Chalk mixtures and astringents only aggravate the symptoms in the first instance, the cause which keeps up irritation still remaining. After we have succeeded in cleansing the bowels, milder alteratives will be sufficient. The hydrargyrus cum creta, or small doses of calomel combined with ipecacuanha and prepared chalk, may be given at short intervals, interposing some mild laxative, as rhubarb and magnesia, or castor oil, once in one or two days. Where the patient has been

much exhausted, an enema of gruel may be given; and if there is much soreness of the lining membrane, laudanum or tincture of henbane may be added. Opium may be combined with the alteratives, especially where the diarrhoea still continues profuse. We have often found advantage in this state, from occasional very small doses (eight to ten grains) of sulphate of magnesia in some spiced water, combined with five or six drops of laudanum. Sometimes the nitric or sulphuric acid with laudanum effectually restrains the diarrhoea, and improves the character of the tongue, especially if there are aphthous ulcerations. The usual astringent remedies are inadmissible in the commencement, and only to be employed if the diarrhoea persist after the bowels have been cleared. The diet should be nourishing, but not stimulating, unless there is very great exhaustion. Arrow-root, gruel, broth, jelly, and other bland articles are the safest. Milk with soda or Seltzer water is very grateful to the patient in allaying thirst and keeping up power, especially where there is sickness. As the diarrhoea subsides, and the secretions become healthy, more nourishment may be taken; but any hurry in this respect, and any carelessness in the nature of the diet, often lead to relapses. Infusions of cascarrilla or cinchona, with either ammonia or the mineral acids, may be tried in the convalescent stage, and pure air will be then of great advantage. In cases where the head affection follows exhausting labours, with or without other signs of intestinal irritation, still greater caution is necessary in the treatment. In both, from a disposition to be too acutely alive to all ailments after parturition, there is often an eagerness to use active remedies, and especially to bleed." 364.

The volume is closed by a long article on diseases of the skin, occupying seventy pages. We should have thought that England might have furnished a labourer for this vine-yard, since many of our physicians and surgeons have distinguished themselves in dermatological researches. The editor, however, has laid M. Schedel, of Paris, under contribution for the article in question; and we are bound to acknowledge that it is constructed with equal care and ability. M. Schedel, indeed, has attained reputation in this branch of medical science long before his appearance on the English stage. If the work be conducted with the talent and research displayed in this first volume, it will command success.

OBSERVATIONS ON THE DISEASES INCIDENT TO PREGNANCY AND CHILDBED. By Fleetwood Churchill, M.D. Dublin, 1840.

IF DR. CHURCHILL'S former work elicited the general approbation of the profession, we feel convinced, that this present continuation (not sequel we are glad to find,) will do so in a yet greater degree. It seems to us, that he has followed out his original design, of combining a condensed practical guide for the young practitioner, together with the means of pursuing the subject in all its details, for those who may wish to do so, in a much more perfect and successful manner, than he did in his former volume. The book, without pretending to contain novel views, or bold and original speculations, but rather a resumé and estimate of all that is known upon the various subjects upon which it treats, yet, is one that will be perused with great interest as well as advantage. We know of no more valuable a present to the stu-

dent, nay to the practitioner himself, than the results of the careful study of medical literature, by a judicious and *practical* physician. Opinions and systems, submitted to the test of his critical powers, and accumulated experience, come before us with an authority and importance their original authors could never have invested them with, inspiring the timid practitioner with courage to continue in a course, on which, unaided, he might have felt himself unwarranted in venturing, and proving to the rash that grave errors have been committed even under the sanction of a great man's name.

To the unthinking the task of compiling such a work as the present may seem easy enough with a little industry. It is not so. Certainly, *book-makers'* compilations are as easy as abundant, (one's very stomach heaves at the idea of another being added to the huge unreadable mass), but how indiscriminating the selections, how artificial the arrangement, how ineffective the conclusions, how destitute of authority, how useless the production, and oh! how *fude* the perusal of such things. Place the materials in the experienced physician's hands, and how different the result. His opinions upon what others have advised, are nearly as interesting and as important as are the propositions he has himself to advance, and there is a freshness, a vigour, an importance, and an authority about his production, which practical knowledge can alone confer.

With pleasure then, do we proceed to present the reader with a detailed account of this valuable, learned, yet practical work.

PART I.—DISEASES INCIDENT TO PREGNANCY.

I. ON THE LOCAL AND CONSTITUTIONAL CONSEQUENCES OF PREGNANCY.

"Pregnancy, then, may be strictly considered as a physiological state, but as one bordering so closely upon the pathological, that it is sometimes difficult to point out the boundary between them; and not unfrequently this boundary is palpably transgressed in several organs or in their functions. In the present chapter, the changes which are induced by gestation, considered as an 'altered,' but not 'morbid' process, will be enumerated, in order that we may more distinctly appreciate the diseased actions which occasionally require our interference." 4.

The author first slightly describes the various *anatomical changes* the uterine system undergoes: thus, the loosening and enlarging the *texture* of the uterus—the great increase of vessels capable of carrying red blood to it—the altered state of the *nerves* going to it, which are not distended, but actually hypertrophied by addition to their substance,*—so too are the *lymphatics* proportionally enlarged. The organ goes on progressively encreasing, distending the abdomen and displacing the bowels, until, according to the calculations of Levret, its capacity is increased 5.19, and its solid substance in the ratio of 12 to 1, compared with the virgin state. The ovary and fallopian tube are considerably more vascular than usual.

* For an account of the recent discovery by Dr. Lee, of a large supply of nervous matter for the gravid uterus, see Medical Gazette, Vol. 26, p. 41.

That *new actions*, and new or *enlarged sympathies* should result from this altered anatomical structure, would be naturally expected; and thus, the general state of the body may become materially changed, especially by the induction of a state of *plethora*, as shewn by the usually buffy state of the blood, and increased quickness of pulse. Again, many *individual organs* suffer: some *mechanically*, and, thus, according to the degree of the enlargement of the uterus, and its position in the cavity of the pelvis or abdomen, we may have constipation, retention or incontinence of urine, severe abdominal or lumbar pain, dyspnoea, jaundice, indigestion, varicose veins, oedema, a painfully stretched or pendulous state of the skin of the belly, &c.; others from *sympathetic irritation*, as the morning sickness, diarrhoea, the production of the milky appearance in the urine (which may sometimes much assist us in our diagnosis of pregnancy), by the secretion of *kiestine* by the kidneys. That the general *nervous system* should be in a very excitable state can cause no surprise, and the evil influence of depressing mental emotions and presentiments, and of disagreeable external impressions, is well known.

II. THE GENERAL MANAGEMENT OF PREGNANT FEMALES.

In endeavouring to relieve the various evils attendant on the state of pregnancy, we must not be too meddling but content ourselves with applying a palliative treatment. Thus, although in some cases *bloodletting* will be very proper, yet, to employ this means indiscriminately, would indeed be most hurtful. In the same manner, aperients, emetics, opiates, though not to be used without good cause, may each occasionally prove of great utility, and will, indeed, together with due attention to pure air, appropriate diet, and an easy dress, enable us to combat successfully with all ordinary cases of sympathetic irritation. Even the local effects resulting from the pressure of the gravid uterus, may also be much alleviated by the use of aperients and lavements, the periodical evacuation of the bladder, and the maintenance of the recumbent or other appropriate posture.

III. DISEASES OF THE GENITAL ORGANS IN PREGNANT WOMEN.

1. *Oedema of the Labia*.—This chiefly appears towards the latter months of pregnancy. It is usually produced by pressure preventing the return of the blood by the veins; and, according to Davis, is especially likely to occur where the pelvis is sufficiently capacious to permit the enlarged uterus to sink into it. In other cases, it may form part of a general tendency to oedema; and, indeed, in most cases the lower extremities are also thus affected. It is usually unattended by inflammation, but at other times it has coexisted with erysipelas. It may reach a large size, and must be distinguished from the sanguineous effusion occurring during labour. A mild purge and the horizontal posture are sufficient to dissipate most cases, and "much comfort is derived from bathing the parts twice a-day with tepid milk and water, and afterwards dusting them with some absorbent powder." Should the distention be great, the parts should be punctured.

2. *Pruritus of the Vulva*.—Dr. Churchill, referring to his former volume for fuller information, quotes a case from Dewees of severe pruritus, arising from aphthæ, which was completely relieved by the application of a strong solution of borax. He also recommends the use of solutions of acetate of lead or nitrate of silver, while some cases may require active antiphlogistic treatment. Dr. Dewees' case reminds us of one, which occurred to us some time since, in the person of a lady far advanced in pregnancy, who suffered the most dreadful torments from pruritus. With a delicacy we at once deplored and respected, she resisted an inspection until our stock of remedies, and her own powers of endurance were alike exhausted, when, upon examination, we found several large patches of slightly raised ulcers of a pale appearance, upon the inner surfaces of the labia. We drew a stick of nitrate of silver across each. The patient slept soundly, the first time for many a night, and scarcely ever suffered again during the rest of her pregnancy.

3. *Vaginal Leucorrhœa*.—Few pregnant women are entirely without this. It would seem to be excited by the pressure of the uterus creating irritation, and impeding the return of the blood, with which these parts are now so abundantly supplied. It is sometimes, though very rarely, accompanied by febrile action. When it is excessive it causes much debility and dorsal pain. Its removal is by no means easy, and, perhaps, of questionable propriety, seeing that it may possibly act as an useful derivative. Great cleanliness, mild astringent washes, and when the habit is feeble tonics, constitute the treatment.

4. *Mentruation during Pregnancy*.—The author refers to a large host of authorities upon this interesting subject, and afterwards thus expresses himself.

"However strange it may appear, the cases on record are too numerous, and too well authenticated, to leave us in doubt that a discharge resembling the catamenia, in colour, quality, and periodicity, does not unfrequently occur during gestation. . . . I have myself seen three or four cases of this deviation. In one it continued up to the 8th month inclusive; in the others it was arrested between the 4th and 6th month; but in all it was well marked, returning regularly, and varying but little in quantity and quality from the ordinary discharge. Still more remarkable and rare are those cases where the catamenia appear for the first time during pregnancy, or only during gestation." 33, 36.

The discharge is usually paler than natural, and the quantity less, but it is never coagulable. He considers its source to be the vaginal mucous membrane, aided perhaps by that of the cervix.

5. *Discharge of Watery Fluid from the Vagina*.—This is quite distinct from leucorrhœa, being a colourless bland fluid, discharged in quantities varying from a few ounces to some pints daily, by which, however, the size of the abdomen is not lessened. Great weakness and lumbar pain accompany it. Dr. Churchill is in doubt whether the vaginal mucous membrane, or the chorion be its source. Dr. Davis calls it a dropsey of the chorion. Every accoucheur must be familiar with examples, in which there has been dribbling of considerable quantities of fluid from the vagina, for days, or

even weeks, prior to labor, and yet at that time, the membranes are found apparently perfect. Dr. Davis considers the affection a dangerous one, but our author does not take so serious a view of it. It is not under our control.

6. *Dropsy of the Amnion*.—Dr. C. justly observes that as this results from an excessive action of the secretory vessels of the amnion, so, properly speaking, it should be considered a disease of the ovum, and not of the uterus. It is sometimes connected with a diseased state of the placenta. Its chief symptom and inconvenience arises from the excessive distention of the abdomen. The child is usually feeble or diseased at birth, or it dies before. Labor may be temporarily delayed by it, and flooding is more likely to follow. All we can do is to attend to the well-ordering of the general system.

“Should the distention be enormous, and the distress be very great, we shall be justified in having recourse to the induction of premature labor, especially because in these cases the child is generally lost when left to nature. Whilst this operation is in our power, it appears to me quite unjustifiable to have recourse to abdominal paracentesis, as recommended by some authors (Scarpa, Desmarais, Davis.)” 51.

7. *Rheumatism and Spasm of the Uterus*.—Although rheumatism of the uterus is recognised as a well-established disease by several German and French writers, yet we agree with the opinion formerly expressed in this journal,* that, although the possibility of such an affection occurring in a muscular tissue like the uterus may be admitted, yet, that the cases hitherto published are by no means conclusive. So, also, Dr. Churchill, by placing this disease under the same head with spasm of the uterus, would seem to doubt its identity with rheumatism, as no one can assert more than a very partial similarity between the two diseases. Indeed, whether we consider the symptoms he enumerates, or the means of cure he recommends, (consisting of occasional depletion, sudorifics, and opiates) we see rather the signs of spasmodic affections, accompanied sometimes with a little fever, than of rheumatism. The simultaneous existence in some cases of pains of a rheumatic character in other parts of the body, is almost the only fact in favour of the existence of the latter.

8. *Hysteritis*.—This affection is usually limited to the portion of the uterus where the placenta is attached; the cervix, however, often eventually participates in the diseased action, while the rectum and bladder become sympathetically excited. There is often much constitutional disturbance. If the disease be extensive the child will probably perish in utero, or be prematurely expelled. Dr. Murphy† states, that rupture of the uterus may often be traced to hysteritis, occurring during gestation. Leeches in sufficient number, and the affecting the mouth slightly with calomel and opium, are the usual means of cure.

* *Méd. Chir. Rev.* No. 63, p. 563, and No. 63, p. 238.

† *Dublin Journal*, Vol. 7.

IV. DISORDERS FROM SYMPATHETIC IRRITATION.

(a. *The Chylopoietic Viscera.*)

1. *Tooth-Ache*.—When this is a neuralgia, produced by the irritation of the uterus, creosote, local stimuli, or counter-irritation, may be employed. Gardien gives stramonium, and Blundell the volatile tinct. of valerian and carbon. of iron. When the gum is inflamed, leeching, scarifying and purgatives: it may be even necessary to bleed. When depending upon catarrh, sialagogues, as pyrethrum, tobacco, or a stimulating gargle, are useful. When caries is present, and the usual means unsuccessful in removing the pain, Dr. C. recommends extraction, providing no disposition to abortion exists.

2. *Salivation or Ptyalism*.—In the salivation of pregnancy, the gums are not spongy or ulcerated, nor is there any factor present. When slight it is of little consequence, but when in excess, and sometimes many pints are spit daily, the stomach becomes very much debilitated. The patient however does not suffer to the extent that might be supposed, and many authors prohibit all attempts to check the discharge. Indeed, this is no easy matter to accomplish, but, when the patient's digestive powers become enfeebled, it should be attempted by counter-irritation behind the ears, aperients, and mild astringent gargles.

3. *Fastidious Taste and Capricious Appetite*.—From the time of Mrs. Pickles' celebrated *longings* for the scarce pine-apples, and for her neighbour's porcelain pôt-de-chambre, husbands and physicians have been often tempted in endeavouring to appease these cravings. Sometimes we suspect, as in the above-named lady's case, they result from capricious or obstinate humour, but, in the great majority of cases, they arise from a morbid state of system, whether this be dependent upon mere deranged sympathy between the stomach and the uterus, or whether it be dependent upon actual disorder of the digestive organs themselves. "But a more remarkable peculiarity, and one less explicable, is the depravation of appetite we sometimes meet with, when the patient utterly repudiates articles of diet of which she was previously fond, or acquires tastes repugnant to her previous habits, or even to common sense." Dr. Churchill, though utterly repudiating the idea of "mother's marks" affecting the fœtus, yet believes that this disordered state of the digestive and nervous system of the mother may prevent the due nourishment of her offspring. True kindness consists in resisting, not in gratifying these desires, when extravagant or depraved. The diet and state of the digestive organs should be carefully attended to. In some cases depletion, baths, antispasmodics, anodynes, &c., according to circumstances, have been found useful; and these fancies usually disappear about the fourth month.

4. *Nausea and Vomiting*.—Vomiting usually occurs in the morning, and ceasing to be troublesome about the second or third month, seldom comes under the physician's notice, yet, in other cases, it may come on during

various periods of the day, and is sometimes so violent as to cause abortion. Again, when it constantly occurs after meals, the patient may sink, worn out by constant irritation, and deprivation of nutrition. The milder cases result from a mere sympathy with the gravid uterus, but the more obstinate depend sometimes upon a state of plethora, or in other cases, as many facts tend to prove, upon a morbid state of the womb itself. Carus assigns a congested state of the portal system as another cause. The stomach, in many cases, may become secondarily inflamed. In the *treatment* of these cases, we should interfere very little in moderate examples, which, indeed, by the removal of indigestible articles of food, may act beneficially, while mere *nausea* will often be effectually relieved by a gentle emetic. Most authors are agreed, that the cases dependent on plethora, are best relieved by small occasional bleedings (which according to Dr. Campbell are most useful at the menstrual periods), or, where this is not admissible, by the application of leeches to the epigastrium. Aperients, counter-irritants, effervescing draughts, the local or general use of opium, have each at times been found useful: the same may be said of Prussic acid, inf. calumb., mint tea, iced water, and where there is acidity, charcoal, alkalis, or the mineral acids. The *diet* is a most important point, and it should be of the lightest possible description, and given only in the smallest quantities. Dr. Ashwell has found very small quantities of milk, when combined with a little lime or soda water, or a few grains of calcined magnesia, remain on the stomach better than any thing else. If the affection resists all these means, and the patient's life is eventually likely to be placed in danger, the induction of premature labour is to be recommended.

5. *Heartburn or Cardialgia, Pyrosis*.—Although usually arising from sympathy with the uterus, these may be caused or aggravated by various descriptions of food, and they may also arise from mental emotions, and a deranged state of the bowels. The appetite is usually destroyed, but otherwise, except in very severe cases, there is not often much general suffering. The *treatment* consists in attention to the *diet* and state of the digestive organs, and in the administration of various alkalis; where these do not suffice, antispasmodics, opium, the abstraction of a little blood, and mild bitters, may each be required under varying circumstances.

6. "*Cramps of the Stomach and Duodenum*.—Under this title Dr. Burns has described an affection not very uncommon with pregnant females. It consists of a cramp-like pain in the region of the stomach and duodenum, occasioning considerable suffering, and even sometimes causing abortion. It is probably dependent upon the state of the bowels, or may be caused by errors in diet, or mental emotion. In some few cases it would appear to be connected with the passage of a biliary calculus, and may give rise to jaundice. Occasionally, however, it is a less simple affection, being complicated with congestion of the head, threatening convulsions, and accompanied with tenderness of some portion of the spine." 108.

In *treating* these cases, after having relieved the pain by a full dose of laudanum, we must regulate the bowels by means of aperients. In the intervals, tonics and counter-irritation at the epigastrium. In severe attacks, accompanied by congestion of the head, depletion, with counter-irritation at the epigastrium, may prevent an attack of convulsions.

7. *Hamatemesis*.—This occurs sometimes, though very rarely, in the early months of pregnancy, but is attended with little danger. Attention should be chiefly directed to the state of plethora which usually produces it.

8. *Constipation*.—This may depend upon both the pressure exercised by the uterus, and the altered state of the vitality of the bowels. Great accumulation sometimes occurs without much uneasiness, and may be overlooked, owing to the passage of a small quantity of liquid stool daily; but generally, both the local and general irritation are considerable, and abortion has even arisen from the tenesmus and repeated ineffectual attempts to empty the bowel. Every practitioner is aware of the difficulties and dangers that may arise from these accumulations during and subsequent to parturition. In treating the complaint we must bear in mind, that the bowels are naturally somewhat confined during gestation, and, therefore, we must not be too active in the use of purgatives. Very mild aperients, assisted by warm water enemata, answer best; yet, in obstinate cases, the bowels must be cleared out by more active purgatives, or even relieved, in old cases, by mechanical means.

9. *Diarrhœa*.—This, though sometimes independent of, at others precedes or co-exists with constipation, and would seem to be occasionally vicarious of the menses. Generally a slight affection, in other cases, it is of so aggravated a character as to endanger abortion or the life of the mother. It is not always judicious to stop it, but it may be kept under by alkalis and mild astringents, or by small doses of hydrarg. c. cretâ and pulv. ipecac. co. (an admirable combination for all analagous affections of the alimentary mucous membrane) and the opiated starch glyster. Frequent, irritating, yet small stools are best relieved by a dose of castor oil, containing 30 drops of laudanum. Burns recommends small doses of ipecac. and rhubarb. Some cases may require bleeding, leeching and blistering, while, in all, the diet and dress should be particularly attended to.

10. *Jaundice*.—This usually comes on towards the termination of gestation, owing generally to the pressure of the uterus upon the gall-ducts, and arising, in other cases, from sympathy with the gravid uterus, or from disease of the liver or gall-bladder. In some of these latter cases, great constitutional irritation is present, and may be followed by abortion, or even the death of the woman. The state of pregnancy obliges us to modify the means we might otherwise employ, but, yet, moderate depletion in the plethoric, the cautious use of the blue pill and anodynes, accompanied by occasional purgation, must be had resort to.

"Some females acquire a dark, almost yellow color of the skin during pregnancy, which must be carefully distinguished from the disease in question, as it is of no consequence, requiring no treatment, and disappearing after delivery."

(b. *Circulating System*.)

11. *Palpitation of the Heart*.—Most females suffer more or less from this during pregnancy, but especially those of a nervous temperament. The respiratory and nervous systems become affected, giving rise to many morbid

sensations, and it is often connected with hysteria. In its treatment we must pay much attention to posture, bleed if plethora exist, and give antispasmodics, opiates, or tonics, to the feeble and delicate. The regulation of the diet and the state of the bowels is of great importance.

12. *Syncope*.—This is not invariably confined to the period of quickening. In delicate persons it sometimes comes on periodically. It is said to be inducible by the opposite states of plethora and anæmia. Burns has met with fatal cases, in which the heart has been found to be diseased. Frequent syncope is probably injurious to the child, and is sometimes followed by abortion. Its occurrence during labor, is always an unpleasant, and sometimes an alarming occurrence, but it does not seem to retard its progress.

(c. Respiratory System.)

13. *Dyspnœa* may arise from various causes; hysterical women are very liable to it in the early months, from sympathy with the gravid uterus, the attack in them being short, sudden, and without fever. In the middle months it seems to be connected with a congested state of the lungs, producing sometimes pneumonia or pulmonary apoplexy, and, of course, accompanied by great constitutional disturbance. In the latter months, it is produced by the pressure of the enlarged uterus, occurring especially in first pregnancies. The treatment required is much the same as if pregnancy were not present.

14. *Cough*.—This is often very obstinate and irritating, destroying rest, and producing head-ache, spasm, and sometimes abortion. In the early months, it is of a spasmodic nature, and unattended with expectoration. In the latter months, it may arise from the congested state of the lungs, produced by the pressure of the uterus upon the aorta, and against the diaphragm, or from a degree of bronchitis when it is attended with febrile action. In some circumstances, bleeding, counter-irritation, and aperients are required; in others, antispasmodics, anodynes, mild expectorants, and diaphoretics.

15. *Hæmoptysis*.—In the few cases where this is found to occur, it generally comes on during the early months, probably owing to the recent suppression of the menses. Capuron observed that most of those subject to it had malformed chests. Treatment not peculiar.

(d. Nervous System and Senses.)

16. *Sleeplessness*.—This most distressing affection is by no means uncommon in the latter months, affecting especially, as do all the inconveniences of pregnancy, the nervous and hysterical. Convulsions occasionally result. Some women fortunately can compensate for their loss of rest by a little sleep in the day, and the restorative effect of a little so taken is sometimes remarkable; distressing and fatiguing dreams often render her sleep of little benefit to the woman. We must endeavour to calm the nervous irritation which usually exists, by the use of mild laxatives and anodynes, by the use of the pediluvium at bed-time, and even, if required, by the detraction of a

little blood. Attention to diet, free exercise and fresh air are important, while, to the very weak, tonics may be cautiously given.

17. *Hypochondriasis or Despondency*.—The brain becomes so peculiarly affected, by sympathizing with the pregnant state, that, we find a woman sometimes afflicted with a settled despondency, without obvious cause or anticipated danger. It is nowise surprising that the victim of seduction should be remarkably liable to this dejection. It usually diminishes as gestation advances, but, at other times, may proceed to actual insanity. The progress of labor may be materially influenced, as may the subsequent "getting up," by this unfortunate state of mind. There is often much headache, and many symptoms of derangement of the digestive organs.

Treatment.—In the slighter cases, time, the arguments of friends, and the due regulation of the bowels will gradually remove the affection, but in the graver cases the state of the brain must be attended to, and, in the words of Burns, "if the despondency be preceded by excitement, marked by heat of skin and frequency of pulse, or by congestion at the base of the brain, marked by slow pulse, and feebleness or languor, venesection will be proper, and in determining this, no attention is to be paid to the paleness of the visage." The author thus concludes the subject.

"As to the moral treatment, I have always found that a fair and honest statement concerning the suffering and danger in prospect, has far more effect than an attempt to make light of the case. By admitting her expectations of considerable suffering to be true, we are more likely to gain credit with her than when we insist upon the risk being very slight." 155.

18. *Head-ache* usually of a nervous character during the early months, during the latter depends on plethora, and may, if not relieved, lead to convulsion. The character of the pain and accompanying symptoms, vary according to the different sources of the head-ache, and so must the treatment. The digestive organs are often much deranged.

19. *Convulsions*.—To prevent repetition, the author treats in this place both of the convulsions which precede and succeed labour. He thinks, that much of the contradictory opinion existing among medical men, arises from the want of a due classification of the various cases: he follows that of Dewees, and therefore treats successively, of hysterical, epileptic, and apoplectic convulsions.

(a.) *Hysteric Convulsion*.—This occurs only during gestation, and usually comes on in the early months. Dewees considers the contraction of the muscles of the back into an arched form to be pathognomic of it. It is not usually a very alarming occurrence, though occasionally premature labor has come on during a paroxysm. There is not the same degree of convulsive movement, the complete insensibility, the frothing of the mouth, or stertor, seen in epilepsy; while, after the fit is over, the patient returns to her natural state. Generally, antispasmodics and diffusible stimuli are required, rather than means of a lowering character, while, a refreshing sleep may often be obtained after the paroxysm by a dose of opium.

(b.) *Epileptic Convulsion*.—The sanguine temperament, and especially in first labors, is most liable to this, the most frequent form. In 38,306 labors, epilepsy occurred 79 times, or once in about 485. It would seem to be produced, in some cases, by the brain sympathising with various sources of irritation; and in others, by the accumulation of blood produced in that organ during labour. The symptoms are those of ordinary epilepsy. The paroxysms are sometimes very frequent, and as many as eighteen in the twenty-four hours have been known to occur. Instead of imperfect recovery from the attack, a state of complete coma may sometimes result, or the patient may even have become maniacal.

When these convulsions occur *during pregnancy*, they generally come on during the latter months, and it is seldom that the patient goes the full time. The child is still-born, often putrid, while the mother usually does well. Convulsion hardly ever occurs in cases of malpresentation.

During labor the paroxysm comes on with the commencement of a pain, but not with every pain, and all the symptoms are more intense than during gestation. If not terminated by art, the labor usually runs its natural course, and is by no means necessarily fatal to the infant, although it is in great danger. These cases are frequently followed by abdominal inflammation after delivery.

When they occur *after delivery*, they usually come on in from two to four hours, and may succeed to labors perfectly natural. The loss of blood, by flooding, &c. at the time of delivery, does not prevent the fits, but adds to the debility.

Prognosis.—"I should say that the cases where the convulsions occur during labor, and continue afterwards, are the least manageable; next to these, the attacks during labor only; then, those after delivery; and, lastly, the most favorable are those which occur during gestation." Out of 152 recorded cases, 42 ($\frac{1}{4}$) mothers were lost. After recovery, the patient may enjoy her usual state of health, and is not very liable to a recurrence of the disease in subsequent labours.

Treatment.—The first indication is free bleeding, and thus even from 40 to 70 ounces have been taken. It may require to be repeated in more moderate quantities, or leeches and cupping substituted. A strong purge will evacuate the bowels, and may accelerate the uterine contractions. The head should be shaved, and cold applied to it, while, after a time, active counter-irritation must be resorted to. The propriety of giving *opium* has been much canvassed, and Dr. Churchill thinks it may be administered advantageously after due depletion. Calomel has been found useful, when given to affect the gums, and Dr. Collins speaks highly of the utility of nauseating doses of tartar emetic.* The propriety of interfering with the

* After bleeding and purging, Dr. Collins gives a table-spoonful of the following mixture every half-hour:—℞. *Aquæ pulegii* ℥viii. *ant. tart. gr.* viii. *tr. opii* gt. xxx. *syr.* ℥ii. *M.* In some cases, four grains only of tartar emetic were put in the mixture, whilst, in others, the quantity of laudanum was increased.

progress of labor is a most important question. Dr. Churchill entirely disapproves of the idea of producing forcible dilatation, and is opposed also to the operation of turning; but he considers we certainly should apply the forceps, when the head has descended low enough, or the perforator, when this is not the case, providing the safety of the mother requires peremptorily that delivery should be completed.

(c.) *Apoplectic Convulsion*.—This seldom, if ever, occurs, except towards or after the termination of labor, being caused by the stress upon the cerebral vessels during the labor-pains. It is usually preceded by headache, flushing, &c. The convulsive movements are usually very brief, after which the patient falls into a comatose state, accompanied by stertorous breathing. There is no partial return of intelligence, and rarely more than one paroxysm. The pulse is slow and full, while the pupils are insensible to light. "In almost all cases, the condition of the patient remains unaltered until death; but there are a few cases, answering, I presume, to the congestive apoplexy of Abercrombie and Lallemand, where our timely aid is successful, and the patient recovers sense and motion; and, if proper care be taken, is speedily well." Upon examination after death, blood is usually found poured out into the ventricles, at the base, or into the substance of the brain. The most active depletion should be immediately instituted; and, in apoplexy resulting from congestion, relief may soon follow, but the other cases are nearly hopeless.

20. *Nervous Affections of the Ears and Eyes*.—Delusions referable to these organs of sense are frequent, depending, when they are not purely nervous, upon a state of congestion of the brain, or of the organs themselves. In some cases the sense becomes lost altogether. When the affection is nervous, counter-irritation, tonics and antispasmodics, with due regulation of the bowels, are required; but where evidence of congestion is present, bleeding, general or local, must be resorted to.

(c.) *The Breasts.*

21. "*Mastodynia*.—In ordinary cases, about the second month, the patient's attention is directed to the breasts, in consequence of a sensation of pricking, tingling, or shooting pain in them, accompanied with increase in size, and a degree of soreness of the nipples. If the breast be grasped, it will be found to have lost its peculiar softness, and to have acquired a firm glandular consistence: the gland encreases as pregnancy advances, until it seems to constitute the entire substance of the breast, the fatty tissue having nearly or altogether disappeared. This disappearance of the softer tissue is often very remarkable. Imbert speaks of a patient of his, whose breasts, large before conception, always decreased during pregnancy in consequence of it." 193.

Usually, little inconvenience attends these changes, but, in other cases, severe suffering may result from various causes, as the firmness of the fibrous capsule resisting the encrease of the gland, congestion, or inflammation, neuralgia, &c. Fomentations, poultices, or anodyne frictions, may be applied. Narcotics may be required. Where inflammatory action is present local or general depletion is useful, and nauseating doses of tartar emetic particularly.

V. DISORDERS ARISING FROM MECHANICAL PRESSURE OR DISTENTION.

1. *Hernia* may be protruded between the fibres of the distended recti, or by reason of a partial separation at the linea alba; or, again, through the enlarged natural openings of the abdomen. Strangulation is likely to occur when the hernia is old, and has contracted adhesions; and, therefore, in all cases of inordinate constipation or vomiting during pregnancy, we should always carefully examine the abdomen. The treatment is obvious.

2. *Hæmorrhoids*.—These occur less frequently in first than in subsequent pregnancies, and, in many women who have borne many children, delivery does not rid them of the evil:—the distended veins never recovering their proper size. In some, they only come on after delivery, owing to the pressure exerted during labor. Mild aperients, tepid or anodyne enemata, leeching, with a bland diet, usually give considerable relief. Dr. Ashwell recommends the use of a tepid lotion (dec. papav. ℥.j. liq. pl. ac. ʒj.) to allay the irritation after a confined motion, as also the injection of a few ounces of warm olive oil, twice daily. He says, much relief is derived from pressing upon each individual pile, until its cavity becomes emptied of blood. After the irritation is subdued, various astringents may be used.

3. *Spasm of the Ureters*.—Burns attributes to this cause the occurrence of severe pain in the region of the ureters and kidney, accompanied by distressing strangury. Purgatives, enemata, opiates, and counter-irritation, form the means of cure.

4. *Incontinence of Urine*.—This distressing affection frequently torments pregnant women in different degrees, and produces sometimes great local and constitutional irritation. It arises, in the early months, from a morbid irritability of the neck of the bladder, or from a temporary paralysis of this same part, produced by the pressure of the uterus upon it: in the latter months, the uterus exerts this same pressure upon the fundus, producing a degree of paralysis also, which is sometimes not relieved until long after delivery. In the treatment of the former class of cases, depletion may be sometimes required, while in the others, fomentations, accompanied by narcotics and demulcent drinks, will suffice. When produced mechanically, little is to be done; cold sponging the back sometimes encreases the retentive powers of the bladder. The patient must also anticipate the involuntary by a voluntary discharge of her urine; always, likewise, paying great attention to the bowels.

5. *Dysuria, Retention of Urine*.—Denman says retention of urine occurs only in natural labor. If neglected, it will produce retroversion of the womb, while the most serious injury may befall the bladder, if permitted to remain distended during labor. According to circumstances, depletion, anodyne fomentations, &c. may be required; and, where the affection has resulted from diminished sensibility and over-distention of the bladder, efforts should be made at intervals, and cold applications applied to the vulva. When the retention is complete the catheter must be used.

One word, *en passant*, as to *passing the catheter* in the female. Simple as this operation usually is, difficulties sometimes occur during and after labor, when the parts are distorted from their natural situations, or concealed by tumefaction. First, then, the accoucheur will find a middle-sized gum elastic male catheter, (better still if it were constructed of the flattened form of female catheters,) used without the stilette, a far more manageable instrument than the silver catheter in common use: from its flexibility, it will follow the tortuosity of the canal, and may be passed, even when the head has descended pretty low, without risk of rupture, while, owing to its length, it can be much more easily made to communicate with a basin held at the edge of the bed. Again, after labor, it is a far better plan not to pass the finger from before backwards, to feel for the orifice of the urethra; but, placing the forefinger at once in the vagina, and feeling the round cord at its upper part, denoting the urethra, the catheter may be usually slid along this finger with the greatest ease into the orifice.

6. *Cramps and Irregular Pains*.—These often cause great suffering, and are more frequent about the fourth or fifth months, and at the end of gestation, owing to the then greater pressure upon the nerves, which, together with the distention of the muscular and ligamentous structures of the abdomen, is the chief cause of their occurrence. When situated in the lower extremities, they often destroy the security of the woman's footing. As they depend on mechanical causes, little is to be done. We must pay great attention to position, and the state of the digestive organs. Some few cases require the loss of blood, while anodynes and counter-irritants may also be tried—especially the *spt. terebinth*. A belladonna or opium plaister is also sometimes useful.

7. *Varicose Veins*.—These seldom occur during a first pregnancy; sometimes, though rarely, the veins of the labia, vagina, and even of the os uteri, are affected, as well as those of the lower extremities. Although usually subsiding after delivery, the varicose state may continue sometimes in women who have borne many children for years, while others are only first affected with varicose veins after delivery. Recumbent position, bandages, and the prevention of loaded bowels are all the means of palliation we possess.

8. *Edema and Anasarca*.—Affecting usually only the ankles, sometimes the hips and vulva are involved, or even a general state of anasarca may exist. Arising, usually, from mechanical causes, at other times it would seem to depend upon a plethoric or atonic state of the system. It usually disappears immediately after labor, but, when it is complicated with erysipelas, it becomes a much more serious affair. Rest and the recumbent posture are usually sufficient, in the slighter cases; and, where great distention is present, Gardien recommends punctures to be made. Erysipelas, or any inflammatory affection, must be treated on general principles.

9. *Ascites and Hydrothorax*.—These cases, except when they result from organic disease, are almost always examples of acute inflammatory dropsy, and occur usually towards the end of gestation. In some cases the chil-

dren have been born affected with ascites, in others healthy. The diagnosis of ascites and pregnancy combined must be carefully made, to distinguish it from the former alone, and the prognosis should be very guarded. As a general rule, in extreme cases, Dr. Churchill prefers the induction of premature labor to the performance of paracentesis.

PART II.—DISEASES INCIDENT TO CHILDBED.

CHAP. I.—ON THE MANAGEMENT OF THE CONVALESCENCE OF PUERPERAL WOMEN.

To save repetition, we shall embody under this one head our analysis of the author's three chapters, on the ordinary convalescence after parturition—the management of puerperal females—and, the variations from ordinary convalescence.

(a.) *The State of the Nervous System. The Nervous Shock.*

"The sudden alteration of the eye, the diminished or increased sensibility of the brain, the disturbance of the respiratory and circulating system, the altered secretions, the great exhaustion, &c. all are evidence of a shock to the nervous system, the effects of which are thus extensively felt. After easy labors it is not very remarkable, and the patient soon recovers from it; but it is too manifest to be questioned after those of a more serious character. It has been usual to attribute the exhaustion of the patient to the fatigue resulting from muscular effort; but when the whole of the immediate consequences of labor are considered, and especially when extreme cases are examined, I think there is proof of much more than muscular exhaustion." 241.

The effects of this shock, when it is moderate, soon subside, and, in proportion to its slowness, the patient becomes quickly restored to a state of comfort. To ensure this, quietude of mind and body, as far as possible, must be maintained, so that sleep, or at all events that passive tranquillity of the system, which is its best substitute, may, if possible, be procured.

But the shock may be *severe*. In such cases:—

"The patient complains of great exhaustion; the senses are either unnaturally dull, or morbidly acute; the breathing is hurried or panting, and the accordance between the respiration and circulation is broken off. The aspect of the patient is that of a person in a state of collapse. The countenance is expressive of suffering, anxiety, and oppression. The pulse may be either very slow and laboured, or unusually rapid, very small, and fluttering. There are many cases, however, where the shock, though far from being so severe as in the case I have supposed, is quite sufficiently so to excite the fears of the medical attendant. Reaction is long before it occurs; or it may take place imperfectly or excessively, and the patient remain for some time in a very weak condition." 259.

In such cases, the patient may recover gradually, or death may occur in a few hours, leaving no traces of disease discoverable after death. The best remedy in these cases is *opium*, giving the patient a chance of salutary sleep, or at all events tranquillizing the agitated state of the nervous and circulatory systems. The very careful use of moderate stimuli may be allowed:—ammonia or musk, combined with opium, being the best, although

even wine or brandy may be required. Suckling must be deferred, or, if necessary, entirely abandoned.

(b.) *State of the Circulation and Respiration. The Pulse.*

" I have carefully investigated the state of the pulse in a number of cases; and in the majority I have found the following alternations take place. During the second stage of labor, the pulse always encreases in frequency, though the amount varies in different persons. Shortly after delivery it falls nearly, but not quite, in proportion to its former frequency; i. e. it becomes nearly as much below the ordinary standard, as it was above it, previously. After the lapse of a few hours, a reaction takes place, the amount of which is nearly, but not quite in proportion to the original increase and subsequent collapse. Again, after 12 or 14 hours it subsides, to be again encreased on the secretion of milk; after which, if the patient go on well, it gradually returns to its ordinary standard. To illustrate my meaning, let us suppose that during the second stage the pulse mounts to 120; then, during the collapse, it will fall perhaps to 60; and, on reaction taking place, will rise to 100 or 110. I do not intend to give this illustration as the accurate standard of these changes, but merely as illustrative of the alternations I have generally observed; nor do I say that they occur in every case, but only that I have noticed them in a very large majority." 242.

There is no better index of impending mischief than an abnormal state of the pulse, and it should therefore be narrowly watched. The author agrees with Dr. Clarke, that no woman can be considered safe whose pulse continues more than 100. Besides the varieties in the pulse, in severe nervous shock, already alluded to, the author has remarked another peculiarity, in cases of *flooding*, viz. its *quickness*.

" In almost all the cases of flooding after labor, when I have had an opportunity of examining the pulse up to the time of the occurrence, I have found it remain quick, and perhaps full, instead of sinking after delivery. This has been so marked in several cases, that I now never leave a patient so long as this peculiarity remains; and in more than one instance I believe the patient has owed her safety to this precaution. Three cases occurred within a very short time of each other, in which I noted this undue quickness of the pulse without any other untoward symptom; at that time there was no excessive discharge, and the uterus was well contracted. In all these, alarming hæmorrhage occurred within an hour, and was with difficulty arrested.

I have also remarked an undue frequency of pulse when the *after-pains* are extremely violent; and as the uterus is in such cases rather tender on pressure, it requires care to distinguish between this state and the commencement of puerperal fever." 261.

It may also become accelerated by lactation, the retention of coagula, diarrhœa, or gastric disturbance.

(c.) *State of the Uterus, Vagina, &c.*

The uterus, contracting immediately after labor, in some hours after enlarges again, and then again gradually diminishes in size, until the 8th or 9th day, when it sinks into the pelvis. His description of the *interior of the uterus* is very good.

" The condition of the cavity of the uterus is of great interest. When examined a day or two after delivery, the lining membrane appears loose and corrugated, somewhat softened, and covered more or less by patches of the

the decidua. The part to which the placenta was attached, is raised above the level of surrounding parts; its surface is unequal, resembling in this respect a granulating ulcer; its size is wonderfully reduced. The whole internal surface is of a dark ash colour, while the discharge upon it may be greenish or brownish, giving the appearance of a morbid condition of the parts—indeed I have known it pronounced gangrene. The structure of the uterus, if cut into, is found to be less dense than natural, and the fibres more distinct. The sinuses are still very evident, and at the placental situation they are filled with clots of blood. The os and cervix are covered with ecchymoses, as though they had been severely bruised; and sometimes small lacerations may be observed in the edge. The orifice remains open for some days, but gradually closes." 244.

The *vagina* is reduced to its natural dimensions in an incredibly short period of time. Some hours after labor the vulva should be washed with a little tepid milk and water, containing a little spirits, and this should be repeated daily, in order to maintain the parts cleanly, and to aid in restoring them to their natural state. The integuments of the *abdomen* remain flaccid and pendulous for a long time, if the patient have not been properly bandaged. The author insists upon the importance of the *bandage*, both in effecting the above object, and in securing and maintaining good uterine contraction. We believe few cases of flooding ever occur where this is attended to, from the moment of delivery. But, it must not be left to the nurse, who is usually too stupid a personage to apply it either in the right manner, or the right place. Where a proper stay is not at hand, the best substitute is formed by passing a broad firm towel, quite low down, and bringing it tightly over the hips, upon a pad formed of one or two napkins rolled up, previously placed just over the uterus, and which prevents the bandage rising up, by filling up the hollow between the *osса ilii*. The author also deems the *horizontal posture* very important, as suited to the relaxed state of parts after delivery, and as even sometimes aiding the replacement of old displacements. We agree with him here too, but, we think it quite unnecessary, in ordinary cases, to keep the woman *in bed*, after the second or third day, when the little feverish action, generally accompanying lactation at first, has passed away. Both her strength and comfort, and probability of sleeping well at night, are increased by letting her be outside the bed, or on a sofa, during the day.

(d). *After-pains*.—Although the presence of coagula generally exasperate these, yet may they occur just as severely when there are none. Within certain limits they are undoubtedly salutary. Sometimes they are of an agonizing severity, and may be accompanied by a quick pulse and tender abdomen, which may throw some doubt upon their nature; but, the tenderness is greatest during the existence of the pains and subsides with them. A full dose of laudanum (not less than 40 drops) should be given, and soon repeated, while fomentations are applied to the belly. We have also found severe after-pains yield best to this treatment, generally giving 60 drops for a dose, and following it up, in a few hours, with an active purge; ordering, as long as the pain lasts, flannel bags filled with hot salt, to be continually applied—a description of fomentation we find much more easily applied, and much less liable to be neglected, than any other we have tried. In a great number of patients, who had suffered most severely before from after-pains, we have succeeded in procuring often nearly an immunity from them,

by the use of the draught copied below,* for the first 24 hours after labor, beginning soon after the child is born, and following its employment by a purge.

(e.) *The Lochia.*—Sometimes this ceases naturally in a few days, especially in women who have borne still-born or putrid infants; but generally, in our climate, it may continue about a month, more or less, according to the constitution of the individual. Nurses and patients attach a vast, and unnecessary importance to the various variations in this discharge. Sometimes it is too profuse in quantity, or too prolonged in duration, causing great debility. If the patient get about too soon, the red colour, or even secondary hæmorrhage may come on. The fætor, though sometimes of an insupportable character, is no indication of disease of the uterus.

(f.) *The Secretions and Excretions.*—During labor the secretion of the skin is much increased, and even after delivery continues more free than usual, giving it a soft greasy feeling. Thus, although we should not expose our patient to a draught of cold air, yet, on the other hand, she must not be oppressed by too many bed-clothes. Notwithstanding the perspiration, the secretion of the kidney is usually increased after delivery also. The patient should endeavour to pass water six or eight hours after delivery. "Owing to the distensible state of the abdominal parietes, the patient will often wait much longer if not reminded; and the consequences may be very troublesome, if not serious. The bladder may become paralysed, or inflammation may spread from it to the peritoneum." A cloth wrung out in warm water and applied to the vulva, will often relieve a difficulty of passing water.

The state of the bowels varies, but, generally speaking, a more or less confined state requires the use of aperients† in twelve or fourteen hours.

(g.) *State of the Breasts.*—Varieties in the period of secretion, and, indeed, a total absence of it, are not usually attended with any ill consequence. We cannot subscribe to all the directions in the following extract:—

"When the breasts begin to enlarge, and to be painful, warm fomentations, frictions with warm oil, or a slightly stimulating liniment, may be employed. A dose of purgative medicine should be given. It is better to put the child to the breast, even if it should not be the intention of the mother to suckle her infant, (?) as it will afford relief, and by not suffering the child to do more, we ensure the ultimate subsidence of the secretion, which is always in proportion to the demand upon it, and if this be very slight, it will soon cease altogether." 257.

Inflammation of the Breast.—This is especially frequent after first labors,

* R. Liq. ammon. ac. ℥ss. Liq. ant. tart. ℥x. Tr. hyoscy. ℥x.—xx. Syrup. aur. ʒj. Aquæ m. v. ʒj. M. ft. ht. cap. j. 4tis horis.—Rev.

† We have found an aperient mixture, recommended by Dr. Conquest, peculiarly useful after delivery. R. Pulv. jalap. ʒss. mag. sulph. ʒss. tr. zingib. ʒss. aq. m. p. ʒiiii. M. ʒj. vel. ʒjas. pro dos.—(Rev.)

and if not soon relieved matter forms. A slight affection, when merely the skin and cellular membrane beneath it are affected, but causing intense suffering when the gland itself and the fascia become affected. In the latter case, in a person of bad constitution, or when it has been badly treated, sinuous burrowing abscesses are formed, draining the patient's strength, and sometimes placing her life in danger. In *treating* such cases, after depleting generally or locally, purgatives, cold lotions, fomentations, or poultices must be made use of. Tartar emetic is especially useful. When matter has formed we must make an incision, as soon as fluctuation is felt, and not wait for the pointing of the abscess.

Sore Nipple is more frequently found in the first labor; the suffering from this cause is sometimes dreadful. To *prevent* this disorder the author recommends there should be applied to the nipples, during the last months of pregnancy, spirit and water night and morning; we have found a solution of alum particularly useful. For the *treatment*, he recommends astringent lotions or ointments, especially the nitrate of silver; and, if the irritation be not overcome, the shield must be had recourse to. Every accoucheur knows the troublesome nature of these cases, and the occasional difficulty in curing them. We would recommend that women, not accustomed to suckle, should not apply the child to the breast *too frequently*; their doing so being often the cause of the affection appearing. They believe that the child's crying is always a sign that it wants the breast, and thus sometimes give it to it twenty times a day, besides letting the little creature drag at them all night. Suckling, under such circumstances, is often a martyrdom, productive of broken rest and disordered health; we have long been in the habit of pressing upon mothers the propriety and facility of establishing, from the first, a habit with the child of expecting the breast only at certain hours—say six or eight times in the twenty-four hours. By this means, the mother's nipples will be often preserved unbroken, and her health unchanged, while the child will be saved from those disastrous effects upon the digestive organs, which a constantly replete state of the stomach would even yet more frequently produce, were not the milk generally rejected by vomiting soon after suckling.

(h.) *Diet*.—Dr. Churchill recommends continuing the slops until the third day, and allows a little meat only on the seventh or eighth day. This is rather too rigorous. When the woman is going on well, and the slight feverish reaction usually consequent on the establishment of lactation has passed, we may let her gradually assume her usual diet, limiting only quantity. Indeed, it is better to mention some simple article of animal food as soon as possible, or the woman, when left to her own invention, and often stimulated by a good appetite, will be very apt to indulge, *sub rosa*, in stewed eels, or some such “nourishing” mess.

2. *Sanguineous Tumor of the Labia*.—This rare affection, coming on during labor sometimes extends even into the pelvis or to the perineum, and at others contains six or seven pounds of effused blood, the exact source of which is by no means very clear. The tumor may rupture, and thus give relief spontaneously; but this is followed in some cases by fainting or death.

When the blood has had time to coagulate in the swelling, we should make an incision into the tumor (applying a compress if any fresh bleeding occur,) and remove the effused blood.

3. *Inflammation of the Vagina*.—This may occur after tedious or preterm labor. From this cause sometimes portions of the mucous membrane slough away, and cicatrices are formed most inconveniently for future sexual connexion and parturition. In treating these cases we must employ the usual antiphlogistic means, especially tartar emetic. During the healing of the sores contractions should be prevented, by the daily maintaining in the vagina, for a short period, gradually increased bougies, of which a wax or tallow candle form the best.

4. *Puerperal Fever*.—We shall not pursue this subject at great length; not that it is not of paramount importance, or that the author has not produced a most learned and excellent account of it, but because he has brought forward no new facts upon the subject, and that it has been very fully entered into in a recent number of this Journal.*

Dr. Churchill thinks five varieties are distinguishable, for, although these may be often blended more or less together, yet in the various epidemics, the prominent local affection has generally been sufficiently distinct. The varieties are:—

(a.) *Puerperal Peritonitis*.—This, which has characterised many epidemics, would seem to attack the peritoneum of the uterus primarily, and then spreading to the other portions of the same membrane, often involves the uterine appendages. Severe after-pains with fever, intestinal irritation, and hysteritis have their several diagnostic marks which distinguish them from this disease.

(b.) *Inflammation of the Uterine Appendages*.—This seldom exists alone, being usually accompanied with peritonitis—the distress, however, being more referable to the iliac regions. Exhaustion is also more likely to ensue rapidly upon the inflammatory symptoms. Bleeding is obliged to be employed much more carefully than in the former variety, and leeches must often be substituted for it.

(c.) *Puerperal Hysteritis*.—Inflammatory action, affecting the substance of the uterus, is by no means rare. Tonnellé found it in 188 cases out of 222—Dugés, in three out of four—and Lee, in ten out of forty-five cases. *Softening* is a frequent consequence of it, and the place of attachment of the placenta is an usual situation of it. Here, too, exhaustion occurs sooner than in puerperal peritonitis. The mild cases usually recover by moderate depletion, calomel and opium, and counter-irritation; the severe cases defy our resources.

(d.) *Uterine Phlebitis*.—Tonnellé found pus in the veins in 93 out of 134

cases, and Lee marks of phlebitis in 24 out of 45 cases. The latter believes, besides the usual causes of puerperal fever in general, that this form may arise from mechanical injury inflicted on the uterus, either during labor, or by the extraction of the placenta. The pain is generally more limited and local than in peritonitis, but the diagnosis is often obscure in the early stages; while in the latter, the nature of the disease is elucidated by the production of various diseased actions, accompanied usually by purulent depositions in remote organs, as the brain, lungs, heart, joints, &c. Severe and epidemic cases defy our resources, and, in all, it is necessary to have a speedy recourse to stimuli.

(e.) *Inflammation of Uterine Lymphatics.*—This too has been observed by several French writers, and by Dr. Lee.* The local symptoms are very severe, and the constitutional ones identical with those of uterine phlebitis.

5. *Rupture of the Uterus and Vagina.*—This is a most elaborate chapter. The accident has occurred 65 times in about 42,768 patients, that is, once in 657. It rarely happens in a first pregnancy. The uterus may be ruptured during labor in consequence of a diseased state of its tissue having existed during gestation,† or on account of the narrowed state of the upper outlet of the pelvis, or again, according to some, from the oblique position of the uterus, directing the child's head against the side of the cervix. Sometimes one of the component structures of the uterus, as the peritoneal, or muscular, has been torn without other portions suffering, but the accident is just as dangerous. In several cases the os uteri has been completely torn off during labor,‡ and, indeed, whenever it occurs from mechanical causes, the vagina is usually involved. The circumstances which should excite our fears, are the occurrence of hysteritis, imperfectly cured, during gestation, and the coincidence of very violent labor-pains with a narrow pelvis. There is always more or less blood effused, which may lead to peritonitis. Rupture of the uterus may also occur during gestation from hysteritis, accidents, or without obvious cause; and, again, it may occur, independently of pregnancy, at an advanced period of life, arising from a process of absorption or thinning of the uterine parietes, produced by distention from the uterine mucus or other fluids being debarred their natural exit, owing to the thickened state of the os uteri, reducing or obliterating the passage. The principal symptoms are—the occurrence of a most dreadful cramp-like pain—the sense of something giving way, accompanied sometimes by a noise audible to the patient—the suspension of the labor-pains—hemorrhage and rapid collapse—the presentation no longer to be felt from the vagina, providing the rupture be complete.

In treating these cases the first question is as to delivery, and, wherever the os uteri has not been in an undilated state, all experience has been in favour of this being performed instantly; for, in nearly all cases of recovery, delivery has been accomplished. The forceps, or perforator, according to circumstances, must be used, and, when the child has escaped into the abdomen,

* *Medico Chirurg. Trans.* vol. 15, p. 64. † *Murphy, Dublin Journ.* vol. 7.
‡ *Medico Chir. Trans.* vol. 11, and *Dublin Journal*, vol. 16, p. 54 and 154.

we must follow it through the rent into that cavity, or, if this cannot be done, the Cæsarian section may be had recourse to, which also affords the only means of treating rupture of the uterus occurring during gestation.

6. *Vesico-vaginal Fistula*.—These accidents, so deplorable in their effects upon the woman's comfort, are not rare. Some one of the following circumstances may give rise to them: wounds and injuries of the vagina by instruments, pessaries, &c. or from the pressure of the child's head—too prolonged retention of urine—laceration of the bladder, &c. The following rule is a good one.

"In all cases, a careful examination should be made, by passing the catheter into the bladder, and a finger into the vagina; then placing the points of both in apposition, the whole posterior surface of the bladder should be passed over, and carefully examined.* At some one point the finger and catheter will come in contact: the catheter may then be passed into the vagina, and the extent of the damage ascertained." 384.

We will not follow the author in his long and interesting detail of the various means which have been tried for the cure of these dreadful cases. Indeed, upon this point we are almost in despair, having witnessed how little success attended the persevering efforts of the late lamented Mr. Earle, who brought to the task all that a sympathising humanity, unwearied patience, great mechanical skill, and a profound acquaintance with the powers and resources of nature could furnish. However, much may be done for *palliation* of this disgusting and distressing infirmity, and we will extract the author's description of some of the means.

"Dr. Gooch, in 1814, suggested to Mr. Barnes the employment of an India-rubber bottle, of sufficient size to fill the vagina, and having upon one side of it a small piece of sponge, to be applied to the fistulous opening. Mr. Barnes used this with great benefit to his patient."—*Med. Chir. Trans.* Vol. 6, p. 586.

"Dr. Evory Kennedy has succeeded in taking casts (with wax) of the vagina with the fistula, in several cases; and from them he made moulds, and had caoutchouc bottles cast in the moulds. These were large enough to fill the vagina, and to close the outer opening, so as entirely to prevent the escape of urine.

I have attained the same object by means of a piece of sponge covered with thin bladder. It should be large enough to fill the vagina and of a suitable shape. A narrow neck, of the dimensions of the vaginal orifice, is to be formed, by wrapping it with twine, which is to be covered with lint. The whole has much the shape of an egg-cup. It should be dipped in oil previous to being used, and then it can be easily introduced, and the stalk filling up the external orifice, no urine can escape. It can be removed and replaced by the patient herself." 400.

7. *Laceration of the Perineum*.—This is most likely to happen in first

* "This is the more necessary, inasmuch as a temporary incontinence of urine is not uncommon after delivery. It generally also comes on soon after labor, so that at first either may be mistaken for the other. A vesico-vaginal examination will always enable us to distinguish them. This incontinence, which arises from a species of paralysis of the bladder, is best treated by the frequent evacuation of the urine—rest—and, when the lochia have ceased, by cold bathing."

labors. Its *extent* is very various; thus, the rent may extend only to the sphincter ani, or it may involve it; in other cases the rupture may take place centrally, having the fourchette and the sphincter untouched; again, the posterior part of the sphincter may be torn open into the rectum, leaving the anterior part of the plane of the perineum untouched.

The *causes* of the accident enumerated by the author are numerous. Thus the *sacrum* may be too *perpendicular*, so that the head will be forced down upon the posterior part of the perineum; so also, if the *arch of the pubis* be too *acute*, preventing the head fitting into it, it will be forced with more than ordinary violence against the perineum; the *too rapid progress of the head*, either on account of the violence of the pains, or from its too small size, will throw it too directly upon the perineum, without its having received the requisite changes of position during its passage through the pelvis: *excessive breadth of perineum* may produce the accident, by letting the head rest on the centre, instead of gliding towards the anterior edge; again, *rigidity* of the perineum, an old *cicatrix*, *pelvic exostosis*, a *weakening* of the perineal tissue by previous disease, an occlusion of the *hymen* may each be a cause, as also may *malposition of the child's head*, by presenting a too long diameter. *Præternatural* presentations, by not adapting themselves to the configuration of the parts, are more likely to cause the rupture than head-presentations. The *awkward position* of the woman, her *starting away*, or employing too strong *bearing-down* efforts, may each contribute to the production of this disaster. Lastly, it may be torn by *instruments*, which should, as a general rule, be removed just before the head passes through the vaginal orifice. We copy the author's valuable directions for the—

"*Preventive Management*.—1. Defects in the passages, which render the mechanism of expulsion inefficient, may often be remedied by the application of the hand in such a manner as to give a direction forward to the head. 2. Direct support should be given to the perineum when distended; but this is frequently *carried to excess*, and produces the accident it is intended to prevent; it should be moderate and gentle—just so much as to support the parts and no more. I must altogether object to any attempt to retard the passage of the child as erroneous in theory and mischievous in practice. 3. When the perineum is rigid and undilatable, benefit may be derived from fomentations with hot water, the use of warm oil, lard, or pomatum. 4. Under no circumstances is it justifiable to dilate the external orifice with the hand, as formerly recommended; on the contrary, instead of drawing back the perineum, it ought to be carried forward. 5. If laceration be threatened in consequence of the persistence of the hymen, it may be incised with a blunt-pointed bistoury. 6. The patient should always cease forcing, and remain perfectly quiet during the exit of the child." 408.

As to the means to be employed for the *curative* treatment we must refer to the work itself, merely observing that slight cases require little or nothing to be done.

8. *Phlegmasia Dolens*.—Although this may occur after a first labor, it is more frequent in women who have borne several children. Delicate women are especially liable to it, and particularly if they have suffered from uterine irritation during or after labor. After taking an historical survey of the various opinions as to the *nature* of phlegmasia dolens, the author thus expresses his own.

" It is evident, that if we take pathological anatomy for our guide, we must conclude the disease to consist in inflammation of the veins of the lower extremities, in many cases propagated from the veins of the uterus; and that the interruption of the circulation through these vessels gives rise to the effusion in the cellular tissue. This view also derives some support from the phenomena which result from phlebitis in other situations. At the same time it is not impossible that some further information may be necessary, before we fully comprehend the true nature of the disease." 419.

We think the author's *prognosis* is rather too favourable.

" Though we cannot say that the disease is without danger altogether, when severe, yet the proportion of deaths is so small, that in the great majority of even severe cases, our prognosis may be favorable: still more decidedly when the attack is slight." 425.

Treatment.—Depletion is to be performed rather by leeches than by the lancet; while cathartics, combined with tartar-emetic, are often useful. There is much difference of opinion as to the propriety of blistering the extremity; some, as Dewees, condemning the practice, while others consider it a specific;* opiates must be employed if required, and the blandest diet insisted upon. After the acute stage has passed, gentle support, counter-irritation, and tonics are desirable.

Dr. Churchill, we think, altogether takes too light a view of the danger of this disease. He has not sufficiently alluded to those examples of it, in which typhoid symptoms rapidly replace the acute inflammatory stage, requiring a much more early and active exhibition of stimuli and tonics, than would be proper in a common simple case. These cases are especially likely to occur in the epidemic constitution of the atmosphere, which favors the occurrence of puerperal fever, to which indeed they are nearly allied.

9. *Puerperal Mania.*—Of the mania occurring *during* labor, the author thus speaks:—

" The temporary delirium, or mania, which occurs during labor, was, I believe, first recorded by my friend, Dr. Montgomery.† It appears at two particular periods of the labor—first, as the head passes through the os uteri, and again, at its exit through the os externum. It would appear to be owing to the extreme suffering at these times, acting upon an irritable and nervous temperament. It is very temporary, generally lasting but a few minutes, and then subsiding. The most curious point about it is, that the patient is generally *conscious* of her incoherence. A lady whom I attended a short time ago, and in whom this delirium occurred, assured me that she knew she was talking nonsense, but that she could not resist it." 430.

Puerperal mania, *after delivery*, is not rare. It usually comes on before the secretion of milk is established, but it may appear much later, nay, even as the result of weaning. The phenomena do not differ from those seen in ordinary insanity. There are two classes of cases, in one of which a quick pulse and fever are present, another in which they are not. In *treating*

* See Wyer, London Med. Phys. Journal, 134; and Edinb. Med. Surg. Journ. vol. 15, p. 156. Sankey, Ed. Journ. vol. x. p. 402.

† Dublin Journal, vol. v. p. 51.

these cases, depletion must be very cautiously employed. The most benefit seems to be derived from cleaning out the bowels by purgatives and enemata, and then administering an opiate, when the pulse does not forbid. Antispasmodics and diffusible stimuli, combined with opiates, have also proved useful. When the pulse is very quick, small doses of tartar-emetic are of great benefit. The greatest quietude and attention to diet must be attended to, and eventually tonics will be required. Waller recommends the child should cease sucking. The moral treatment requires great judgment; but, generally, more good is got by seeming to humour, than by resisting the patient.

We do not doubt that long before this, the reader has been convinced of the justice of the opinion we pronounced upon this work in commencing our analysis. Although this analysis is a very full one, it has by no means exhausted the treasures of the book, and every one, who wishes to make himself master of the subjects upon which it treats, will do well to obtain it. The arrangement is a little faulty, but that is a subject hardly worth naming in a work of this kind.

ON THE NATURE AND STRUCTURAL CHARACTERISTICS OF CANCER, AND OF THOSE MORBID GROWTHS WHICH MAY BE CONFOUNDED WITH IT. By *J. Müller*, M.D. Professor of Anatomy and Physiology in the University of Berlin, &c. &c. Translated from the German, with Notes, by *Charles West*, M.D. Graduate in Medicine of the University of Berlin. Illustrated with numerous Steel Plates and Wood Engravings. Part I. Octavo, pp. 182. London, Sherwood & Co. 1840.

ON the reputation of Professor Müller as a profound physiologist, we need not speak. He has united the laborious accuracy of the German with the common-sense and matter-of-fact mind of the Englishman. Such a man must carry to the department of pathology a spirit of investigation eminently calculated to achieve great results, at least if any such can be obtained by careful observation and a sound judgment.

It must be owned that the intimate nature of cancer and of the morbid growths which may be confounded with it, is at once an inviting and a forbidding subject—inviting, because it is a sort of El Dorado of pathological adventure—forbidding, because so many inquirers have made shipwreck of their labours on its confines. Will this new voyager share their fortune?

1. *Uncertain External Characters of Morbid Growths.*

Professor Müller begins by some observations on the uncertainty which has attended, still attends, and, we fear, will continue to attend, the diagnosis of tumors, founded on their external characters, or on their internal appearances. So numerous, he justly observes, are the transitions into

each other of those general mechanical differences which the exterior or interior of morbid growths presents, that the observation of the above-mentioned characteristics is alone insufficient for the purposes of accurate diagnosis. Growths, indeed, which are peculiar to certain tissues may often be distinguished with certainty without minute examination, as is the case with neuroma in nerves, and with polypi in mucous membranes. If, however, any organic tissue is subject to many and various changes, some of which are peculiar to it, while others occur also in different tissues, then does accurate diagnosis often become exceedingly difficult, or, in the present state of our knowledge, even impossible. These difficulties are greatest in the case of tumors which do not owe their existence to the peculiarities of any particular structure, but which may occur at the same time in many and very different tissues. A tumor of a non-malignant nature may readily assume the appearance of one that is carcinomatous, and be easily mistaken for it. The different stages of development of tumors are a further cause of the great confusion which prevails throughout this subject.

The causes of these difficulties are set forth by Müller. Many innocent growths, he remarks, have the peculiarity of progressing in their development with greater or less rapidity. If inflammation should be set up in their substance, solution of continuity may take place in the parts covering them, and a fungoid growth with an ulcerated surface may be formed. The more independent, however, that a growth has become, the further is it removed from the healing, restorative influence of the organism. Moreover, a tumor originally not malignant may, owing to the decomposition which goes on in its inflamed and diseased interior, as well as on its ulcerated surface, exert an injurious influence on the whole constitution; it may give rise to repeated hæmorrhages from its surface, and may induce a state of general cachexy. Should, however, the nidus of these morbid changes be extirpated, their cause is removed; the health will, under favourable circumstances, be restored; and the tumor will not return, unless there exist in the constitution a tendency to the local deposition and organization of the substance which formed the growth. The tumor of aneurism by anastomosis affords an instance of this, as do albuminous sarcoma, and the tumor fibrosus s. desmoides.

The difficulty of diagnosis is greatly increased by the analogous appearance which the malignant and non-malignant tumors often assume when once they have passed into the open state, and continue to grow with an ulcerated and decomposed surface. Thus, aneurism by anastomosis becomes, when in the open state, very similar to fungus hæmatodes in the same condition.

Usually it is regarded as an infallible sign of malignity if a tumor, after having been extirpated once or twice, returns at the same spot, as is so often observed in the case of carcinomatous tumors; but even on this point it is possible to be deceived. The tumor may return because it is not completely extirpated; any part that is left, such is their independence of the general organism, furnishing the nucleus of a future growth.

The diagnosis of morbid growths, Müller goes on to remark, is rendered still more difficult, by the circumstance that, though carcinoma is generally a constitutional disease, yet, under certain circumstances, non-carcinomatous growths may be so too, without necessarily assuming the nature of carcinoma. Tumors formed of tubercular matter, imply the previous existence of the

tubercular diathesis. If such a growth is extirpated, it may not return either in its old seat, or in any other part; but, under certain conditions, it may re-appear. This would depend entirely, upon whether the tubercular diathesis still existed at the time when the operation was performed, or whether, though previously present, it had already ceased. Other non-carcinomatous tumors afford instances of similar occurrences; thus, enchondroma of the osseous system may exist in many different parts, in consequence of a diathesis to its formation. The tumors once formed, continue to exist; but if the hand of a patient is removed in after-life, in consequence of the large size which the tumor there may have acquired, the disease will not return in that situation, though it remains unaltered in other parts of the osseous system previously affected during youth.

External, or superficial structural characters being thus insufficient, an accurate microscopical and chemical examination has become a desideratum—in order that we may arrive at all the information which our present methods of investigation bring within our reach. The object of a microscopico-chemical analysis of tumors would be to ascertain whether there are any important internal differences in their organization and chemical composition, and, if they do exist, exactly to determine their nature: it is evident, however, that in practice no such subtle differences can serve as a foundation for the diagnosis of morbid growths. Some pathognomonic characters must, therefore, be found out, such as are easily recognizable, and which do not imply the possession of any peculiar talent, nor of physiological skill. Microscopical and chemical analyses can never become a means of surgical diagnosis. But, if by these analyses we can make out characteristic structural differences in tumors, we may, with such internal differences, connect external and easily appreciable ones. A consummation, we apprehend, more devoutly to be wished for than confidently to be expected.

“The means of which we have hitherto been possessed have sufficed, indeed, to distinguish fatty tumors, polypi of mucous membranes, neuroma, aneurism by anastomosis, tumor fibrosus, and some forms of carcinomatous disease, as cancer alveolaris, melanodes, and medullaris. The diagnosis of carcinoma of the mammary gland is still exceedingly difficult, if not impossible; cancer medullaris, too, cannot always be certainly distinguished. Tumors not of a carcinomatous nature have often been confounded with it, because they returned after having been completely extirpated; and, the operation being at length successful, persons have fancied that they had thus cured medullary carcinoma. Scarcely any definite meaning can be attached to the terms sarcoma, steatoma, osteosarcoma, osteo-steatoma, although they are words in current use in medicine, and even in pathological anatomy. A glance at the literature of spina ventosa shews that this obscure appellation has been given to a variety of different diseases of bone; and, lastly, many important forms of morbid structure have been totally undescribed. It must, indeed, be owned, that the greater attention which has of late been paid to the external and internal characters of morbid structure has much advanced the progress of pathological anatomy. Thus, though Mr. Abernethy's attempt at a systematic arrangement of tumors was not very successful, yet his observations, together with those of Burns and Hey, have made us acquainted with the peculiar nature of medullary sarcoma. Equally valuable is the knowledge of cancer alveolaris, for which we are indebted to Laennec, Otto, and Cruveilhier. Fibrous tumors, which certainly are most easily recognized, owing to the peculiarity of their texture, which is usually firm and fibrous,

often tendinous and glistening like satin, have been separated from the debatable classes of steatoma and sarcoma, while Bayle has examined their nature with great success. Sir A. Cooper has taught us to distinguish many morbid growths of the breast and testicle; and, further, to him we owe a valuable work on osseous tumors. The various forms of encysted tumor have been well and carefully examined by Dr. Hodgkin. Lastly, we thankfully acknowledge our obligations to the labors of Wardrop, Langstaff, Travers, v. Walther, &c. on carcinomatous growths, as well as to the systematic treatises of Laennec, Cruveilhier, Heusinger, and others." 6.

The upshot, however, of all that has been done or has been attempted, does not, in M. Müller's opinion come to very much, for he asserts that the system followed by most writers is scarcely superior to that adopted by Marcus Aurelius Severinus, whose observations, for the time in which he lived, are excellent.

M. Müller sets forth the time he has expended and the pains he has taken in this investigation, pains and time without which nothing could be done. He arrived at length at the conviction, that in all morbid growths there are constant differences which may be recognized with certainty. The author found that he had formed the most correct notions with regard to those forms which present analogies to healthy structure, as the tumor fibrosus s. desmoides, the albumino-fibrous tumor, enchondroma,—the parallel to cartilaginous structure,—and cellular sarcoma, a parallel structure to the tissues of the chorda dorsalis, and of the decidua, which are composed of cells analogous to those of plants.

"As early," he proceeds to say, "as the year 1836, the author had recognised with the microscope the cellular structure of various morbid growths; namely, of laminated cholesteatoma, of cellular polypi, and of osteo-sarcoma. At the same time the author pointed out the analogy between cholesteatoma with its polyedrous cells, resembling those of vegetable parenchyma, and that cellular structure of the chorda dorsalis which he had been the first to demonstrate. Enchondroma also was described as a structure parallel to cartilage, both in anatomical and chemical characters, and sufficiently distinguished, by the presence of chondrine, from other morbid growths. Fibrous structure was shewn to predominate in the tendino-fibrous and albumino-fibrous tumors, as well as in carcinoma hyalinum. Very regular crystals were observed in many growths, and several new and peculiar forms of carcinomatous degeneration were described. The presence of caudate bodies, as a primary element of morbid structure, was soon afterwards ascertained by the author, who gave a description of them as they exist in fungus medullaris, and in melanosis." 8.

Nuclei, cells, caudate bodies, fibres, and crystals, are the only elementary bodies which have hitherto been discovered. Cells would seem, from the researches of Schleiden and Schwann to be of great importance, all the tissues of the embryo, according to the latter, being formed from cells, which are themselves developed from nuclei; growth being the result of fresh formations of cells, which afterwards undergo transformation into other tissues. M. Müller set himself to work to test the application of Schwann's observations on healthy to morbid structures, and he found them correct; for, by employing a high magnifying power, cells were observed in many morbid growths, in which they were not previously known to exist, as in collonema, in many varieties of carcinoma, and in enchondroma. In most growths presenting a cellular structure, with the exception of cholesteatoma and cel-

lular polypi, the nuclei of the cells were discovered, situated either in their walls or in their interior: in many instances, too, young cells were formed within older ones, as was the case in sarcoma, enchondroma, carcinoma, and collonema.

2. Chemical Examination of Morbid Growths.

As morbid structures present elementary forms common to the normal, so their chemical constituents offer analogous resemblances. It is perhaps by the conjunction of the slight differences of either kind, that peculiar characters can alone be made out.

Chemistry points out three grand differences between morbid growths. The proximate animal principles which exist in them are composed either of some kind of fat or gelatine, or of albumen. This, of course, is not asserted strictly, but only with reference to the mass, since other materials, as osmazome, salivary matter, caseine, &c. are present in small quantities. The division of morbid structures into the three classes distinguished by the presence of fatty matter, of gelatine, and of albumen, is moreover only relative, for those materials occur combined in pathological products. It is therefore only by the predominance of one of the three ingredients in question, that the leading chemical character of a morbid growth will be determined. The classification is a loose and general one.

a. "*Fatty Tumours* present many varieties, partly in their structure, partly in the nature of the fat they contain. They always consist of an animal, organized base, composed, not of fat, but of cells or cysts secreting it, and of the fat itself. Their nature may be, in part, determined by the physical appearance of the fat: in part it is discovered by the action of certain re-agents; some fat being capable of conversion into soap, while another kind of fat is incapable of undergoing that process. The fatty constituent of these growths is fusible at a certain temperature, greases blotting paper, is extracted by hot alcohol or ether, and is again deposited in forms either crystalline, or irregular, on cooling or evaporation. To this class, lipoma, or the common fatty tumor, may be referred, and cholesteatoma, or the laminated fatty tumor." 11.

In the structures of which fat is not the chief element, it generally exists either in the form of oil-globules, or of granules, or of minute crystals.

b. *Gelatinous Morbid Growths*.—These are recognised by their almost entire reduction by long boiling to gelatine. The length of time requisite for this differs in different cases. In many instances from ten to twelve hours suffice; eighteen or more hours are often requisite; and to effect a complete solution of all parts containing gelatine, a longer period is frequently necessary. Growths yielding gelatine, when once known, may easily be recognized. The gelatine obtained by boiling, whether chondrine or ordinary gelatine,—*colla*,—is naturally mixed with osmazome, which must be removed. Among the class of growths yielding gelatine may be ranged the cellulo-fibrous tumor, the tumor fibrosus s. desmoides, enchondroma, and the osteoid tumor.

c. *Albuminous Morbid Growths*.—"These either yield no gelatine, even when boiled from eighteen to twenty-four hours; or if, after long boiling, some gela-

tine should appear, still by far the greatest portion of the growth remains undissolved, thus shewing, that some substance of an albuminous nature is its main constituent. The water in which these structures have been boiled may contain, even after having been filtered, a substance soluble both in hot and cold water. Some of these growths yield a trace of caseine, which may be detected, in addition to the ordinary not very decisive tests, by a little acetic or hydrochloric acid, which renders the filtered fluid turbid, but restores its pellucidity when added in excess. The fluid is also rendered turbid by alum, but does not recover its transparency on the addition of an excess of that substance. Caseine exists in a very minute quantity in most albuminous structures, as in albuminous sarcoma, in carcinoma simplex, or reticulare. Sometimes, also, these growths contain a substance closely allied to salivary matter, and precipitated neither by acids, alkalies, metals, nor earthy salts, and even not by alcohol nor tannin. The presence of this matter can be discovered only negatively, by evaporation to dryness and carbonization. The author found it in collonema, and in carcinoma alveolare; in the gelatiniform mass of which latter growth no caseine could be detected." 13.

When not kept long in spirit, these growths contained osmazome.

The external appearance of albuminous structures is sufficiently striking. They never have a compact, tendinous texture; sometimes they are tender and gelatiniform, like the chorda dorsalis; at other times fibrinous, like decidua; sometimes they are cellular, granular, or fibrous; generally they are friable and easily torn. To this class belong collonema, scrofulous tumors, albuminous sarcoma, albuminous osteo-sarcoma, and all varieties of real carcinoma. If gelatine be present, it is probably from the cellular tissue in the growths.

3. *Microscopic Characters of Morbid Growths.*

The minute microscopic elements of morbid growths are, in addition to capillary vessels; fibres, granules, cells both with and without nuclei, caudate or spindle-shaped bodies, and vessels. Our author has detected blood-vessels in all morbid growths except cholesteatoma, which is often developed within cysts, with which it maintains no organic connexion. M. Müller scouts the idea of scirrhus being unorganized; and he also repudiates the notion of the arrangement of the vessels in any tumor, except in aneurisms by anastomosis, presenting any thing remarkable. Injections, therefore, have done little service in this direction, and they have the disadvantage of concealing important forms of structure, such as may be satisfactorily studied by means of the microscope, in fresh specimens, or even in such as have been kept for some time in alcohol.

Fibres are a grand constituent both of the albuminous and gelatinous growths. Thus, the cellulo-fibrous tumor, and the tendino-fibrous tumor, are composed of fibres; and so are the albumino-fibrous tumor, and the carcinoma fasciculatum, seu hyalinum. In the cellular albuminous tumor, fibres are quite a secondary element. In carcinoma alveolare, the walls of the old cells, in which the generation of new cells takes place, become at last split into isolated fibres, having scarcely any connexion with each other. Occasionally, too, the caudate cells, when arranged in a certain manner, produce in albuminous growths an approximation to fibrous structure.

Granule is the name applied to such spheroidal or elliptical bodies as do not present any internal cavity when viewed under the microscope. They are present in vast numbers in some albuminous tumors. Often, too, in different specimens of carcinoma, the germinal cells were found to contain, in addition to the formative globules and young cellules, a number of small granules perfectly distinct from both. In carcinoma fasciculatum, many round granules are situated between the fibres.

The *Cell* is by far the most frequent element of morbid growths. Thus, it exists in sarcoma cellulare, in enchondroma, in carcinoma simplex, reticulare, and alveolare. In many growths this cellular texture is so coarse as to be evident by a very low magnifying power, or even to be distinguishable by the naked eye; but, generally, the cells, unless magnified 400 to 500 times, look like granules.

"Cells sometimes form the only tissue of morbid growths, as in the case of cholesteatoma, of carcinoma alveolare, of cellular sarcoma, and of osteo-sarcoma. In these instances, cells cohering by their walls form the important parts of the structure, while fibres of cellular tissue serve only to form membranes uniting together its several lobuli.

In other cases, where microscopic cells still form the basis of the growth, these cells do not cohere, though in close apposition; but, on the contrary, are free, may be separated from each other, and, when looked at under the microscope, present the appearance of globules. It is only by employing high magnifying powers that their real structure becomes evident: then they are seen to be spheroidal cells, the presence of a small cellule, or of several corpuscles in their interior, serving to mark their cavity. These minute globular cells, which form the real *seminium morbi* in several forms of carcinoma, as in carcinoma simplex, reticulare, and alveolare, are deposited in extraordinary number in the meshes of a fibrous texture." 16.

Nuclei.—The presence or absence of a nucleus in the walls of the cell constitutes a structural difference between morbid growths. The nucleus, when present, is situated in the substance of the wall of the cell, and from it the cell has been developed. Sometimes also a cell contains within its cavity nuclei, which serve as the germs of new cellules. This is the case in enchondroma, and in carcinoma alveolare. In most cases, as in enchondroma, in several forms of carcinoma, in cellular sarcoma, and in osteo-sarcoma, the parietal nucleus, at least, of each cell is evident, and may be recognized by its flat or roundish form, and generally by its darker tint. In other instances, however, the cells have no nuclei; of this, cholesteatoma affords an example.

Some normal cellular structures, cartilage for instance, yield gelatine—so does the cellular pathological structure, enchondroma. The cellular textures, the chorda dorsalis, and decidua, yield no gelatine—nor do the parallel pathological products—gelatiniform tumors and cellular sarcoma.

Young Cellules.—"Some cells do not contain *young cellules*, while within others a series of younger ones are encased one within another, and this furnishes us with a new means for distinguishing between different morbid growths. Laminated cholesteatoma affords an example of the former kind, for it consists of a polyedrous cellular tissue, resembling vegetable parenchyma, in which the author has never detected smaller cellules. In other cases the cells are encased,

one within the other. A cell, when viewed under the microscope, appears to contain corpuscles in its interior; but careful examination shews, in accordance with Schwann's discoveries as to the primitive formation of healthy tissues, that these corpuscles are either young cells, one contained within the other; or nuclei, from which young cellules are developed. This holds good of many of the cells in sarcoma cellulare, in carcinoma alveolare, and in enchondroma, as also of some formative globules in carcinoma simplex and reticulare. The finest cells can be recognised only by the most powerful magnifying-glasses, and often are not larger than 0.00015 to 0.00021 of an English inch: the average size of the cells in growths with a cellular base is 0.00054 of an English inch." 17.

Caudate Bodies.—Another frequent element of morbid growths. They are elliptical pouches, or cells, terminating at one or both extremities in a fine caudiform fibril of uncertain length. Sometimes the interior of these bodies is granulated, and filled with a greater or less number of granules. The interior of their cavities is, however, seldom distinctly visible, though occasionally a nucleus, of a somewhat darker tint than the surrounding substance, may be observed, together with one or more nucleoli. Schwann observed the same structure in primitive cellular and in other tissues undergoing the transformation from cellular to fibrous structure. Elongated cells become fibres, and thus do most fibres in the animal body seem to be formed: but in those structures which consist of caudate corpuscles, it would appear as though the development of the fibres had been arrested while they were in the half cellular state in which they exist in the embryo. Frequently, one end only of the corpuscles is prolonged into a fibril, while the other remains obtuse. There is a great difference, too, in the length of the fibril: sometimes it is no longer than the corpuscle, or even does not equal it in length, while at other times it greatly exceeds it. The diameter of each fibril is generally from $\frac{1}{2}$ to $\frac{1}{3}$ only of that of the corpuscle. In no case has the author observed several corpuscles connected with one fibril. In some instances, however, not only does each end of the corpuscle give origin to a fibril, but a third springs from its side, and sometimes the fibril which proceeds from the end of the corpuscle becomes bifurcated at its extremity.

The arrangement of the caudate corpuscles often presents great varieties, sometimes a few only being found in fungus medullaris, at others there being so many as to constitute the main bulk of the tumor.

The caudate corpuscles are by no means peculiar to fungus medullaris; they may, indeed, often be observed in its substance, but often they do not exist in it, while they are as frequently met with in non-carcinomatous as in medullary growths. They occur in the substance of aneurism by anastomosis, and in one instance the author saw them in an albuminous osteo-sarcoma of the lower jaw, which was extirpated with success. On another occasion a large benignant fungus of the conjunctiva, of the nature of albuminous sarcoma, was made up almost entirely of these corpuscles. In no instance has the author met with them in large number, in those tumors which become converted into gelatine by boiling. Nevertheless, it is possible that, even in these latter growths, they may be found at certain periods in considerable number, for they probably depend only on the transformation of cells into fibres, and consequently are merely fibres in an early stage of development.

4. *Development of Morbid Growths.*

"Differences in the structure of the microscopic forms of morbid growths depend on the way in which their development proceeds. Cellular growths are those in which the process of development can be most easily traced, now that Schwann has laid the foundation for such investigations by his discoveries with regard to the development of healthy tissues. According to Schwann's observations, nearly all animal tissues are, in their primitive form, composed of cells, which have precisely the same structure as those of vegetables, and their formation and growth are regulated by laws exactly resembling those to which Schleiden discovered the cells of plants to be subject. In the wall of each young cellule is a nucleus from which it is developed. New cells are formed either within the interior or on the surface of old cells: in the former case they are developed from a nucleus loose within the cavity of the parent cell, and unconnected with its parietes. Schwann has demonstrated the former process as it occurs in cartilage, and in the chorda dorsalis: the latter appears to take place in the case of many other textures, for Schwann has shewn that all tissues in the embryo consist of cells with parietal nuclei, though it is not possible in all to prove the formation of new cells in the interior of old ones. An instance of the constant formation of new cells with parietal nuclei, external to the old cells, is afforded in the adult by the cells of the epithelium, which do not display any approach to an endogenous mode of growth. The formation of young cells can, however, be best observed in those cases in which they are developed internal to the old ones, or, in other words, in which the nuclei of new cells are situated within the cavity of old cells. In these cases the process of development as observed by Schleiden in vegetable tissues, and by Schwann in those of animals, is as follows:—

The nuclei protrude young cellules, which project from their surface as the watch-glass from the watch. As growth proceeds, the young cell increases in size, while the nucleus remains imbedded in its wall. If several young cells should be formed from several nuclei seated within the parent cell, they progress in growth so as to fill up its cavity, and then their walls usually become confounded with those of the parent cell. Fresh nuclei form within the cavity of these young cells, and from a repetition of this process result successive generations of cells. The walls of the young cells are perfectly transparent, but those of the older cells become thickened, and, in animal tissues, often converted more or less into a fibrous structure. In this way the cells of cartilage and of the chorda dorsalis, probably also those of the decidua, become developed." 32.

It would be natural, observes our author, to expect a similar process in the formation of many pathological structures. The young cells in enchondroma and in cancer alveolaris are formed in a precisely similar way; and the author's observations render it probable that the same process also obtains in the development of many forms of carcinoma, and of cellular sarcoma. Albumino-cellular sarcoma and osteo-sarcoma, and gelatiniform sarcoma, appear to be developed in this way, as is also collonema. In many of the parent cells the young cellules with their parietal nuclei, were very distinctly seen. Successive series of cells, encased the one within the other, are seen to make up the structure of carcinoma alveolare. The large cells, which are visible to the naked eye, contain in their cavities a second generation and so forth, till we arrive at the smallest cells of all, in which are nuclei of a darkish yellow tint, generally somewhat elongated, and presenting a minutely granular structure. Here and there these nuclei may be seen lying free in the cavity of the cells; in other parts they have already evolved a germinal cell, and may be seen imbedded in the substance of its

parietes. The walls of the large cells, when greatly developed, appear to assume a fibrous structure, and at last to burst.

The formative globules of simple and of reticular cancer of the breast are not merely cells containing granules, but sometimes in the interior of each are one or more roundish or elongated germinal cells, with a darkish nucleus in their parietes, from which they have probably been developed.

How similar soever, adds our author, the most different morbid growths may be at their first origin, still they present great diversities in their subsequent development—a fact which he illustrates by what takes place in carcinoma alveolare, and in carcinoma simplex and reticulare.

5. *Development of Caudate Corpuscles.*

“It results from Schwann’s observations on the tissues of the embryo, that these bodies are cells which have undergone a metamorphosis. In proof of this may be adduced the fact, that not only has the author seen caudate corpuscles in carcinoma medullare scattered among cells; but likewise in a specimen of sarcoma with caudate corpuscles in the midst of the fasciculi of these bodies were cells, some elongated, and others round, containing a germinal cellule with its parietal nucleus. In this instance the greater part of the morbid growth presented a fibrous appearance, owing to its being formed of caudate corpuscles arranged in fasciculi; but towards the surface the fibrous part seemed to assume a granular structure, and examination with the microscope shewed that there cellular globules existed in place of the caudate corpuscles. In melanosis some of the cells containing pigment were seen by the author to be round or oval, while others had a caudate foam. Lastly, caudate corpuscles are sometimes seen in which there is a distinct cavity. The external skin of the fœtus is, according to Schwann’s observations, entirely formed of caudate corpuscles which terminate in long fibres, and constitute the fibres of the skin. In many other situations, too, Schwann saw caudate corpuscles in cellular tissue. These facts satisfactorily account for the presence of caudate corpuscles in innocent as well as in malignant growths. They are, like the germinal cells, an embryonic formation; and embryonic formations are found to be repeated in a remarkable manner in morbid growths.” 24.

The consequence of these observations would seem to be highly important—for they upset the division of pathological structures into homologous and heterologous—a division, says M. Müller, founded on “gratuitous hypothesis.” Some other pathognomonic characters of carcinomatous growths must be sought. The distinction between the carcinomatous and the innocent forms of albuminous growths presents the greatest difficulties. Here, neither the minute structure nor the chemical characters of the growth can be our guide, for carcinomatous tumors belong to that class the main constituent of which is a substance yielding albumen; consequently there are malignant albuminous growths. On the other hand, the diagnosis between carcinomatous structures and such as yield gelatine is very simple.

“Whether the carcinomatous diathesis be peculiar and distinct from all others, or whether, under certain circumstances, any other structure may pass into the state of carcinoma, still the same question presents itself;—is there any other characteristic of carcinomatous growths than such as are derived from their minute structure, or from the process of their development? The solution of this question must always be the grand problem in the anatomy of morbid growths. The examination of numerous specimens of sarcoma has taught the

author that they are, indeed, possessed of certain peculiar anatomical characters, which may serve to identify them; and, further, that these characters are distinguishable, on making a section of the growth, either by the naked eye, or at any rate by the aid of a common magnifying glass.

Although the structures which belong to this class are extremely various, still one may take the place of another. After the extirpation of carcinoma simplex, for example, carcinoma alveolare or fasciculatum may succeed, and often the several forms are coexistent. But, although transitions of the different forms into each other may occur, yet their extremes are very dissimilar, and no sort of resemblance can be traced between carcinoma simplex, or scirrhus, and carcinoma fasciculatum. In order, therefore, to be able to recognise carcinoma, a person must make himself acquainted with the individual peculiarities of every form of morbid structure, both innocent and malignant: in short, he must proceed as the botanist does who busies himself with the study of poisonous plants." 26.

M. Müller is convinced that a tolerable degree of accuracy and certainty may be attained, in diagnosis, but he admits that there are some forms of disease, which, being destitute of any well-marked external peculiarities, may be readily confounded with others.

The principles, he winds up this introductory chapter by remarking, in accordance with which morbid structures must be classified, cannot be exclusively derived either from their minute structure, or from their chemical composition. For growths widely differing in their physiological characters and in their susceptibility of cure may present a perfect identity in their minute structure: similarity of structure may coexist with differences in their chemical constituents, or the same chemical characters, may be found in growths, between which the greatest diversity exists with regard to their structure, physiological characters or curableness. In determining the different genera, therefore, the subject must be regarded in all these points of view.

M. Müller passes to the particular consideration of the several morbid growths. He first treats of the minute structure of carcinomatous growths—and then examines those morbid growths which may be confounded with carcinoma. The present publication is only the first Part of the entire work; the second is to appear hereafter. The importance of the subject, and the commensurate importance of the manner in which it is handled, furnish ample reasons for our noticing it in the fullest manner.

ON THE MINUTE STRUCTURE OF CARCINOMATOUS GROWTHS.

M. Müller opens this section with some observations on carcinomatous growths in general—and then takes up successively—scirrhus, or carcinoma simplex—carcinoma reticulare—carcinoma alveolare—carcinoma melanodes—carcinoma medullare—carcinoma fasciculatum, and winds up by an account of the development and softening of carcinoma—the chemical properties of carcinoma—and the nature of it. To each of these subjects we shall now advert.

1. On Carcinomatous Growths in General.

M. Müller defines those growths as cancerous, which destroy the natural
No. LXV. K

structure of all tissues, which are constitutional from their very commencement, or become so in the natural process of their development, and which, when once they have infected the constitution, if extirpated, invariably return, and conduct the persons who are affected by them to inevitable destruction.

It appears to us that such a definition is unsatisfactory, and possibly not altogether correct in a practical sense. It is unsatisfactory because it rests on a character difficult to be determined—the implication of the constitution; and it may be incorrect, because we cannot say that, even if the constitution be involved, the tumor must inevitably return after extirpation, and destroy the patient. No doubt it will do so in the immense majority of cases, but we know too little of the amount and the nature of constitutional implication, to pronounce so authoritatively on its effects. We freely admit, however, that the definition is as good an one as can be given, and if it leans on the side of the malignancy of cancer, so much the better for surgery and for humanity, so much the better for the repression of those cruel and useless operations which *were*, at all events, too frequently resorted to.

The forms of disease, observes our author, which may be classed under this head are extremely various, though in some cases they pass into each other by imperceptible gradations. This fact and the circumstance that, after extirpation of the disease, one form may take the place of another, serve to exhibit the physiological connexion between growths, the extremes of which often do not shew even the most remote similarity of structure. The different kinds of carcinoma may either succeed each other, or may co-exist.

The most invariable anatomical character of the carcinomatous degeneration is loss of the proper tissue of the affected part, which always disappears during the progress of cancer. However dissimilar the tissues, all become involved in the same cancerous degeneration.

It is, however, in the interstices of healthy tissues that the elementary forms of carcinoma are at first developed. In these interstices are found the germinal cells of cancer, a real *seminium morbi*. This is seen excellently well, when the muscular coat of the stomach is affected with carcinoma alveolare. The germinal cells of carcinoma are deposited between the bundles of muscular fibre, which in the early stages of the disease are easily distinguishable: at even a later period the muscular layer of the stomach, though enormously swollen, may still be recognised, until at length the production of the germinal cells equally in all the coats of the stomach obliterates every trace of their different layers, and of the natural structure of the organ.

The parts in the neighbourhood of a cancer usually become firmly connected with it at an early period, hence carcinoma is less moveable than other growths. In the female breast, this adhesion to the pectoral muscles and skin, as well as the retraction of the nipple, are remarkable—both, however, may be absent. M. Müller dilates on the anatomical characters of carcinomatous disease of the walls of the stomach, but it does not seem necessary for us to follow him.

He observes that eccentric development is not peculiar to carcinoma, nor does softening always begin at the centre of the growth; nor is it always characterized in its early stages either by lack of vessels, or by any peculiar

distribution of them. The vessels in it bear the same relations as in other parts: sometimes they are scanty, at other times exceedingly numerous.

He adds:—"The positive characters of carcinoma do not display any thing heterologous or foreign to healthy organization: some of the elements of cancer occur in the healthy organism of the adult, while others are such as exist in the primitive foetal state of tissues, as cells, varicose fibres, and cylindrical fibres. Varicose fibres are produced by the elongation of cells and their linear arrangement, and perfect fibres are, in their turn, formed from such as are in the varicose state; whence it follows that the differences of the extremes depend merely on the point at which the development of the tissues is arrested. A structure, the development of which is arrested while the cells are in their primary state, will be very unlike one in which the cells are elongated, and in progress of transformation into fibres; while those growths which tend rapidly to assume a fibrous texture will also present a different appearance.

An albuminous substance forms the basis of all carcinomatous growths; for, if freed from skin and cellular tissue, they may be boiled for eighteen or twenty-four hours, without yielding more than a very small quantity of gelatine; often, indeed, without the slightest trace of it being discovered. The author has often repeated this experiment with carcinomatous growths, and always has arrived at the same result, namely, that the mass of carcinoma is perfectly insoluble in water. What little of it is dissolved occasionally contains caseine and salivary matter." 32.

We think that these observations will put an end to the confident anticipations expressed by some pathologists, and entertained by many persons in the profession, that some simple microscopic test of malignant growths would be discovered. Our readers may remember, that, in our notice of Dr. Hake's paper upon "Varicose Capillaries," we gave expression to our doubts of the importance of the observation, remarking that it was consistent with reason to suppose that in morbid growths, whether malignant or otherwise, the capillary vessels would be likely to enlarge and become varicose. The consistence of such doubts with the results of extended investigation will be evident from what M. Müller has stated. An instance this of the caution requisite in giving public expression to philosophical discovery.

Having made these observations on carcinomatous growths in general, M. Müller passes to

Scirrhus, or Carcinoma Simplex, or Carcinoma Fibrosum.

M. Müller observes that, prior to the discovery of medullary sarcoma by Mr. Burns, and of cancer alveolaris by M. Laennec, this was regarded as the only form of cancerous degeneration. Most descriptions, therefore, of cancer of the breast, by the earlier writers, refer to this variety of morbid growth, characterised by its almost cartilaginous hardness, by its being irregular in outline, seldom lobulated, presenting a grey appearance when divided, and generally giving rise to connexions between it and the skin, and to retraction of the nipple.

M. Müller cites the observations and descriptions of Adams, Baillie, and a host of others, but, passing over these, we shall content ourselves with bringing forward his own account of the appearance of common scirrhus of the mammary gland.

"The diseased masses are generally irregular in form, not lobulated, hard, and resisting the knife, and presenting, when divided, a greyish appearance, which has but very little similarity to cartilage. Whitish bands are not invariably present. Scirrhus of the mammary gland occasionally shews, here and there, whitish filaments some of which are hollow, and contain a colourless, whitish, or yellowish matter. Probably this appearance of white filaments is the result of thickening of the walls of the lactiferous tubes and lymphatics, and this idea is confirmed by the absence of these filaments from scirrhus of non-glandular parts. The mass of scirrhus is composed of two substances, the one fibrous, the other grey and granular. The fibrous substance is rarely apparent immediately on making a section of these growths, but is seen on scraping away the grey matter, for which it serves as a sort of basis. On removing the grey matter, either by scraping it away or by maceration, the fibrous substratum is seen to be composed of a very irregular network of firm bundles of fibres. The grey matter is found to consist of microscopic, formative globules, but slightly adherent to each other. These globules may be seen on examining fine sections of scirrhus with the compound microscope, or, still better, by scraping out the grey matter and examining it alone. The formative globules are then seen to be transparent, hollow cellules, from 0.00048 to 0.00108 or 0.00130 of an English inch in diameter. They are insoluble in acetic acid, and also in water, at any temperature. In many of these cells, only a few points, which look like small granules, can be seen; while in others a larger body may be distinguished, which looks like a nucleus, or like a smaller vesicle, contained within a formative globule. In many scirrhous breasts which the author examined, he was unable to convince himself of the presence of smaller cellules within the formative globules, while in other instances their existence was distinctly recognized. The appearance of these smaller vesicles within the larger seems to depend on the formative globules being in the stage of development. In one case of exceedingly hard scirrhus of the breast, which had passed into the open state, many formative globules were seen in the condition represented at Plate ii, fig. 14*. In several of these cells no vesicular content was observed, but in many others, under a high magnifying power (from 400 to 500 times), one or two smaller cellules were seen, each of which was furnished with a small, darkish corpuscule—a nucleus. Though crowded closely together, the formative globules lie between the meshes of a fibrous structure, with which they have no connexion, and from which they can be easily removed, while, notwithstanding the thinness of their walls, they can be isolated from each other with the greatest facility." 43.

M. Müller goes on to say that it is difficult to make out whether the single or double vesicular corpuscule, which is often distinctly seen within the formative globule, corresponds to the nucleus of a cell, or whether it is a young cell encased within the old one. He inclines, however, to the opinion that the vesicular bodies do correspond to young cells.

Since, he remarks, many structures in the embryo are originally developed from cells, there exists a general resemblance between the cellular texture of carcinoma and the primitive state of those tissues. But the analogy is only general, carcinoma not resembling one tissue more than another. In addition to the formative globules of carcinoma, oil globules are numerous diffused through scirrhous growths.

* "The author gave a short notice of this structure in a postscript to an article by Schwann, in *Froriep's Notizen*, 1838. Januar. No. 3."

Carcinoma Reticulare.

M. Müller believes that he was the first to describe this form, a more frequent one than even carcinoma simplex in the female breast. On making a section of it, he says, it may be immediately distinguished from the latter by the white reticulated figures intersecting the grey mass, which are perfectly evident to the naked eye. It acquires a large size more readily than carcinoma simplex, and is further distinguished from it by its tendency to assume a lobulated form. It sometimes approaches the consistence of scirrhus; at other times it is softer, and more nearly resembles fungus medullaris. A great number of observations have convinced the author that the consistence of this form of carcinoma is very variable, while its structure always remains the same, and is so peculiar that it may in all cases be recognised by the naked eye on making a section of the growth. Indeed, with the exception of cancer alveolaris, no form of carcinoma can be so readily distinguished. By far the greater number of cancerous degenerations of the female breast belong to this class, and more than thirty recent specimens of it have come under the author's notice within the last four years.

Carcinoma reticulare is not unfrequent in other organs. M. Müller saw it in the swollen axillary glands in a case of cancer reticularis of the mamma: once he observed it in the stomach, and he has seen it both in adults and in children in tumors of the orbit and of the ball of the eye, attended with complete degeneration of the muscles of the eye, of its coats, and of the optic nerve. He has only once found it in cancer of the lip, and once, in enormous masses, in the anterior mediastinum, similar small growths having formed on the surface of the heart.

"Carcinoma reticulare is composed of a grey mass made up of globules, and imbedded in a reticulated fibrous tissue, which is not seen until after the removal of the grey granular mass. The grey mass consists of transparent formative globules or cells similar to those of carcinoma simplex. These globules likewise often contain two or more smaller vesicles with nuclei of a pale colour. In other cases, however, the smaller germinal cellules could not be distinguished within the interior of the larger formative globules, which were then found to contain a number of small granules. Occasionally these granules were present in great number in the interspaces between the cells, and in some of them a molecular motion was distinctly evident. The cells themselves had a diameter of 0.00022 to 0.00039 or 0.00043 of an English inch, while the diameter of the granules contained within them did not amount to one-fourth or one-fifth of that size.

The white, or yellowish-white reticulated figures which are always more or less distinctly evident in this form of cancer, present a very peculiar appearance. These figures are irregularly reticulated: sometimes they present a branched arrangement, at other times they appear in spots. They are peculiar formations, not dilated vessels with thickened parietes, such as are sometimes seen in carcinoma simplex, but they are produced by the deposition of grains of white matter in the grey mass. These grains do not appear to be cells, but generally seem to be made up of opaque granules agglomerated together, so as to form roundish or elongated corpuscles. These corpuscles are usually of a round or oval shape; sometimes, however, they are elongated, and it is not uncommon for them to be much longer than they are broad. They are two or three times as large as the red particles of the blood, their greatest diameter being 0.00076 of

an English inch. This structure of the white substance of carcinoma reticulare is not, however, in general evident to the naked eye, nor even with the aid of a lens; but the corpuscles of which it is composed are usually so distributed through the grey matter, as to present the appearance of a white net-work.

If these white figures are examined under the simple microscope with a magnifying power of eight or sixteen diameters, the corpuscles of which they are composed may be distinguished.

A higher magnifying power exhibits the granular appearance of these corpuscles, which, when seen by transmitted light, of course appear dark. Lastly, we may isolate these bodies under the compound microscope, and convince ourselves that they are formed by the agglomeration of small granules, either perfectly opaque, or but slightly pellucid. These white granules are not rendered transparent either by acetic acid or by alcohol." 47.

The white corpuscles accumulate with the development of the disease, and form, by the time that disorganization has commenced, a large part of its structure. They constitute a portion of the softened matter and purulent secretion yielded by the ulcerated surface.

Occasionally, in carcinoma reticulare of the female breast, cavities form in the interior of the structure. Once, the author observed a large cavity, the walls of which were completely occupied by white corpuscles. Masses of this sort extend, still preserving their reticulated figure, and may be separated in large portions of a soft consistence, for the purposes of chemical analysis. The matter composing them is found to be very similar to coagulated albumen. As the disease advances, the reticular figures become confluent, and appear like irregular white spots.

"In one specimen of cancer reticularis mammæ, the author observed throughout its tissue many little cavities, varying in size from that of a millet seed to that of a pea, filled with a yellow, puriform, or cheesy matter. These cells were furnished with distinct walls, but their cavities communicated here and there with each other, so that the contents of several cells could be squeezed out through an opening in one. The larger ramifications of these cells gave off smaller branches. The interior of even the smallest cells, the diameter of which did not exceed half a line, was found to be furnished with a distinct lining membrane, to which blood-vessels were distributed. The matter which these cells contain must not be confounded with the white globules strewn through the reticulated figures, although it is possible that both may have a common origin. In the instance just spoken of, the white reticulated figures formed here and there large masses, which were merely imbedded firmly in the surrounding tissue, and did not exhibit the slightest approach to a cellular structure. In another part of the same morbid growth was a carcinoma alveolare of the size of a hazel nut, the cells of which were filled with a jelly-like matter. The author has frequently seen patches of carcinoma alveolare, forming part of the morbid growth, in cases of carcinoma simplex mammæ." 49.

Carcinoma reticulare is sometimes slowly, sometimes rapidly, developed. In far the greater number of cases it returns after extirpation. But, in one instance, Professor Pockels removed a cancer of this sort with complete success—in another case, the disease has not yet returned, though two years have passed since the extirpation; this was a case of carcinoma reticulare complicated with carcinoma melanodes of the ball of the eye and orbit, in a young woman—in another case of carcinoma mammæ the disease had been removed in the other breast five years previously.

Carcinoma Alveolare.

Described in Germany by Otto, as a peculiar species of scirrhus of the stomach, and, in France, by Laennec and Cruveilhier as "cancer gelatiniforme" and "areolaire." M. Müller takes Otto's account of the appearances in a case, as exactly representing the general anatomical characters of the disease.

The scirrhus occupied more than two-thirds of the whole stomach, and extended from the pylorus over a width of more than seven inches of its anterior and posterior wall. The walls of the stomach were so thickened at the diseased parts, that they did not collapse. In several places they were two inches and a half in thickness. The surface of the scirrhus part was uneven and tuberculated. Otto says that its substance differed so much from that of ordinary scirrhus, that, perhaps, it ought not to be referred at all to that class of diseases. The basis of its structure was composed of innumerable white fibres and laminae crossing each other in all directions, and having their interspaces occupied by cells which varied in size from that of a grain of sand to that of a very large pea. Some of the cells were closed, but many of them communicated with each other: they all contained a very viscous, clear, perfectly transparent jelly. Externally, the diseased growth was covered by peritoneum, through which the half-projecting sacculi and cells were seen. The inner surface of the stomach was almost entirely deprived of its lining wherever the disease extended, and most of the cells, both large and small, opened into the cavity of the stomach, into which, when firmly pressed, they poured their contents. The inner coats of the stomach were entirely destroyed by the disease, the muscular coat extended for a short distance into the morbid structure, but small cells filled with jelly-like matter were everywhere deposited between the muscular fibres.

M. Müller adds, that, at the commencement of the disease, the mucous and muscular coats of the stomach swell, and sections of the latter present that striated appearance observed in all forms of carcinoma of the stomach. The cellular structure containing the jelly-like matter develops itself between the bundles of muscular fibre, but the like process takes place at the same time in the mucous membrane. In the early stages of the disease the cells can be distinguished only by means of the microscope.

Occasionally, this cellular structure not only becomes developed in the stomach, but also forms isolated nodules in different parts of the surface of the peritoneum.

The symptoms of this form of cancer of the stomach are peculiarly obscure. It is especially slow in producing the cachexia cancerosa, but the peculiar colour of the face characteristic of organic disease of the stomach has not been absent. Cancer alveolaris, however, is not confined to the stomach. Cruveilhier has seen it in the small intestines, in the rectum, cæcum, uterus, ovary, and in the bones; and the author has also met with it in the intestines, in the female breast, in the great omentum, and especially in the peritoneum. The jelly-like matter contained in the cells yields no trace of gelatine.

"Cruveilhier distinguished between 'cancer areolaire gelatiniforme,' and 'cancer areolaire pultacé:' the cells of the former contain a transparent jelly, those of the latter a turbid pultaceous matter. He has observed the latter

form in the uterus and in the bones. The case which he relates of 'cancer alveolaire pultacé' of the skull is very remarkable, and the representation he gives of it is very interesting. The diseased bones were the frontal, the ethmoid, the inferior turbinated bones, and the vomer. The morbid growth extended both outwards and inwards, and had attacked the mucous membrane of the nose, and the dura mater." 52.

M. Boutin Limousineau analysed the yellow matter from the cells, and found that it contained caseine. A somewhat similar structure was observed by M. Müller in a breast removed by M. Dieffenbach.

"The author obtained the following results* from microscopic examination of carcinoma alveolare of the stomach. If the smaller cells are looked at under the microscope, they are found to contain encased within them many still smaller cellules, which in their turn include others of yet more diminutive size. In the smaller cells the darkish yellow parietal nucleus is distinctly evident. Many cells, likewise, contain mere nuclei, free within their cavity, as cystoblasts from which new cells are to be afterwards developed. The walls of the largest cells are distinctly fibrous, and their fibres run from one cell to another. Twice the author observed rod-shaped crystals in the jelly-like matter of preparations which had been kept in spirit; and on another occasion he saw spindle-shaped corpuscles in the jelly from a cancer alveolaris of the breast.

The history of the development of carcinoma alveolare corresponds exactly to that of the primitive formation of cartilage and of the chorda dorsalis, as described by Schwann. The young cells are produced from cystoblasts, or nuclei developed in the interior of the parent cell; and although the parent cell continues to increase in size, these young cellules by degrees fill up its cavity. At length the walls of the young cells come in contact with each other, and they form together with the parent cell, within which they are encased, one compound cell. Thus, the process of development goes on, till the larger cells on the internal wall of the stomach burst, and pour their jelly-like contents into its cavity.

The fibres forming the walls of the largest cells constitute a nidus within which younger generations of cells are developed. In order, however, to observe the manner in which the cells are encased one within the other, and the relation they bear to their nuclei, it is necessary to examine them in an earlier stage, and before their walls have begun to be split up into fibres.

The main point distinguishing carcinoma alveolare from carcinoma reticulare and carcinoma simplex seems to be, that, in the former the cells continue to grow, and their walls become adherent to each other, while this progressive development and mutual cohesion do not take place in the delicate cellular globules of the two latter forms of cancer." 54.

Carcinoma Melanodes.

M. Müller starts by observing, that melanosis is merely a variety of cancerous degeneration, for it terminates in the same way as carcinoma, and is frequently combined with other species of it.

Carcinoma melanodes is generally lobulated, whether it forms the whole of a morbid growth, or is merely interspersed through the substance of some

* "A short notice of them appeared in an article by Schwann, in *Froriep's Not.* 1838, Januar. No. 3.

other form of cancer. When it appears in the substance of an organ, it forms masses more or less completely isolated.

"Microscopic examination detects two forms of melanotic structure. In both instances the basis of the structure is formed of a fibrous network, the stroma of melanosis, within the meshes of which the melanoid matter is deposited. This matter is generally composed of cells, filled with yellowish or blackish granules. These cells are, and always continue to be free, never becoming coherent. Their forms are very various. Many, indeed most, are round, oval, or irregular; some are elongated; a few actually caudate, terminating at one or both extremities in a point, or in a fibril. Still more rarely the cells present several points. They are real pigment cells;* some of them are of a palish yellow colour, others darker, while the interior of others is stained of a dark brown by the granular pigment they contain. It was but seldom, and then only with difficulty, that the author succeeded in detecting, in one of the larger cells, a nucleus with its nucleolus, independently of the pigment granules. The diameter of the cells varies greatly; the largest are more than 0.00108 of an English inch in diameter; while smaller ones had a diameter of 0.00105, 0.00095, 0.00073, 0.00045, 0.00039, or even less, of an English inch." 56.

It has not been ascertained whether the increase in number of the pigment cells depends on the production of fresh ones within the parent cell, or whether new cells are formed external to the old ones.

The pigment globules, continues M. Müller, when very small, display that molecular motion common to all very minute parts, even to the globules of the pigmentum nigrum of the eye. The pigment globules are seen not merely within the cavities of the pigment cells, but also strewn between them, and it is only in the case of these free lobules that the molecular motion is observed. The existence of free pigment granules, external to the cells, is perhaps to be attributed to the bursting of the cells and the extravasation of their contents. Many pigment cells are much smaller than others; probably they are young cells which have been set free by the bursting of the older and larger cells, or possibly they may have been formed external to them. Moreover, many cells, and especially many caudate corpuscles, are of so pale a colour, as apparently to be quite destitute of pigment.

In some specimens of melanosis, the author discovered no pigment cells, but all the pigment globules appeared to be free, and dispersed through the meshes of a fibrous tissue. He thinks it probable, that, in these instances, the formative organs of the pigment granules were dissolved, for the latter are always contained in cells.

Carcinoma Medullare.

M. Müller adopts the opinion generally entertained in this country that

* A short notice, by the author, of the caudate corpuscles in melanosis appeared in Müller's Archiv. 1837, Heft. v. p. 466, Anmerkung. The author likewise made some observations on the pigment cells of melanoid structures in a postscript to Schwann's third paper, in Froriep's Not. 1838, April.

fungus hæmatodes and medullary sarcoma are only different designations for accidental varieties of the same structure.

The soft cancer, of the consistence of the brain or of the placenta, may have not merely a whitish or yellowish white colour, similar to that of the cerebral substance, or a blood-red hue like the placenta, but it is subject to many other variations of colour; and sometimes the same morbid growth will exhibit all varieties of hue in different parts of its substance.

These fungoid growths are highly vascular, but they present, in addition, a medullary mass composed of globules or other corpuscles, and a tissue made up of delicate fibres, in the meshes of which the medullary portion of the growth is contained.

"When perfectly free from other matters, the medullary part of these growths presents a whitish or greyish white colour. If a portion of fungus medullaris is cut in pieces and squeezed under water, the medullary corpuscles, which are very easily soluble, impart to the water a milky hue, more or less tinged with blood. The intensity of the red colour of fungus medullaris depends on the relative proportion of bloodvessels which it contains; but the bloody patches which are sometimes interspersed through the substance of the structure are in part produced by the effusion of blood into the meshes of its tissue. The brownish hue which the ulcerated surface of fungoid growths presents, is probably produced by decomposed blood.

The external form of fungus medullaris is often lobulated: its appearance when cut or broken varies greatly; sometimes it shews no trace of any definite arrangement of fibres, while, at other times, fibres are indistinctly seen either running parallel to each other, or intersecting each other irregularly, and in some instances displaying a radiated or tufted arrangement. In few cases, however, is this fibrous structure very distinct, for the morbid growth may easily be torn in other directions than in that in which the fibres seem to run; and irregular pieces may often be broken off, though it is not possible to tear off a regular tuft of fibres." 60.

Fungus medullaris usually forms large tumors, but, in some few instances, it presents itself in the shape of a great number of very small ones. It occurs at all ages, and in every organ and vascular tissue. When it appears on the surface of the tubular or flat bones, it receives a slight support from a peculiar skeleton formed of very delicate aciculæ or laminæ of bone, which, proceeding in a radiated manner from the surface of the bone, penetrate into the interior of the soft tumor. Yet Sir A. Cooper successfully amputated a limb affected with a fungous exostosis containing such spicula. If fungus medullaris has its seat in the interior of a bone, not merely does it fill up the cavity of that bone, but induces a state of atrophy in the osseous tissue, and reduces the substance of the bone to a mere shell, so that the slightest cause suffices to produce fracture. It rarely happens that the bone is distended in a spherical manner by medullary fungus in its interior.

The relation of medullary sarcoma to carcinoma simplex is shewn by the fact that, after extirpation of a scirrhous breast fungoid growths not unfrequently follow.

"This affinity is likewise further illustrated by microscopic examination, which shews that many structures comprehended under the generic term of fungus medullaris differ greatly from each other, and have nothing in common

but the softness of their texture. Several forms, which present no external differences from others, approach very nearly in structure to the most consistent species of cancer, carcinoma simplex, and contain similar cells or formative globules; the softness of their texture being produced by the presence of a great number of these globules distributed through a very delicate tissue. On the other hand, we have seen that carcinoma reticulare, a form of cancer which presents a very peculiar structure, varies in consistence from that of the hardest scirrhus, to that of fungus medullaris. Further, there are varieties of fungus medullaris, the exterior of which presents nothing peculiar or different from other forms, but which shew a great particularity on microscopic examination, appearing then to be formed in a great measure of caudate or spindle-shaped bodies, or of cells, the development of which has been arrested, while in the intermediate state between cells and fibres. At first, one might be tempted to separate this form from the rest, under the name of carcinoma closteroides; but more extended investigations prove that this division would be unwarrantable, for cases are met with in which, although the medullary part of the morbid structure is composed principally of formative globules without caudate appendages, yet caudate bodies do occur in greater or less number among the round corpuscles. It will hereafter be seen that this variety of internal structure is met with also in the case of innocent albuminous sarcoma, which is sometimes composed of cells, while at other times, it consists of caudate and spindle-shaped corpuscles so arranged as to produce the appearance of an imperfectly fibrous structure." 63.

M. Müller accordingly employs the term fungus medullaris collectively for different forms or stages of development of soft cancer; referring to this genus the following varieties:—

1. Carcinoma medullare, abounding in roundish formative globules which make up the greater part of the medullary mass, though intersected by a delicate fibrous network. These formative globules, M. Müller regards as very similar to those of common cancer, and to those which constitute the grey mass of carcinoma reticulare: a few points, or very minute granules, were often all that could be detected in their interior, but frequently, on making use of a high magnifying power, a nucleus may be seen just as in other forms of carcinoma. The size of these globules is about the same as in common cancer, though it presents great varieties.

2. Carcinoma medullare, with an exceedingly soft cerebriform base, composed of pale, elliptical bodies, without caudate appendages. The author is acquainted with but one specimen, which he can refer to this class: it was a case of cerebriform fungus medullaris of the foot, and of the interior of the tarsal bones. With the exception of the vessels which were distributed to the diseased mass, its substance was almost entirely formed of uniform ellipsoidal corpuscles, which cohered but very slightly with each other. These corpuscles had a very pale hue when looked at under the microscope; they were one-and-a-half or twice as large as the red particles of the blood, and equalled them in breadth. The author in no instance observed a fibril proceeding from these bodies, nor did he ever see a single nucleus or a young cellule in their interior. A few very minute points were all that could be detected by the highest magnifying powers.

3. Carcinoma medullare, with caudate or spindle-shaped corpuscles. Sometimes, on tearing a piece of this kind of fungus medullaris, the torn surface will present a resemblance to a fibrous structure. This appearance is owing to several of the caudate corpuscles being arranged in one direc-

tion; as was observed in a case related by Valentin. The author has seen a similar structure in several specimens of fungus medullaris; sometimes interspersed in the midst of round, formative globules, at other times forming the greater part of the growth.

M. Müller goes on to state:—"According to the direction in which the caudate corpuscles are disposed, a radiated appearance is sometimes produced, at other times the structure seems more tufted, while, in other instances the direction of the corpuscles is so various, that the tumor does not display the slightest trace of fibrous texture. It is, indeed, not always easy (even when the caudate bodies are so disposed as to occasion a fibrous appearance) to tear the growth into tufts of fibres, although irregular portions of it may be broken off very readily. Frequently, however, the caudate corpuscles are arranged with great regularity. Their interior presents the appearance already described, namely, it contains either a granular substance without any evident nucleus, or a nucleus with one or more nucleoli may be more or less distinctly seen. These corpuscles are prolonged at one or both sides, and in some rare instances at more than two sides, into fibrils of different length. They are cells, the development of which has been arrested in the stage of transition from cells to fibres."

M. Müller observes that, since so many fibrous tissues in the embryo are formed from caudate cells, there is evidently nothing extraordinary in the occurrence of caudate corpuscles in morbid growths of very different physiological tendencies; in the innocent, as well as in the malignant; and, consequently, no inferences can be drawn from their presence with regard to the character of the structure in which they occur. The only guide, he says, which remains is afforded by the tendency of cancer to interfere with the natural structure of surrounding parts, while those formations which are of a benignant nature leave the neighbouring healthy tissues unaltered. The caudate corpuscles being formed from round cells, the occasional co-existence of round cells with nuclei, and of caudate corpuscles in the same medullary fungus, is not surprising. In all cases of medullary sarcoma fat is present in the shape of fat globules which are free, and not enclosed in cells.

Carcinoma Fasciculatum. (Syn. Hyalinum.)

Some structures ranked as fungus medullaris, though soft, are fibrous in their texture. This is evident on breaking or dividing them.

"If examined under the microscope, they display neither the cellular globules of other varieties of carcinoma, nor the caudate corpuscles which give a fibrous appearance to some forms of fungus medullaris. The fibres often have a tufted arrangement, running in a divergent course from a common centre; in which case the masses may be rent into radiated bundles, the apex of which is directed towards their point of insertion, their base towards the uneven surface of the tumor. Or, some of these tufts of fibres are arranged in one way, some in another, large masses of fibres forming but one tuft, while in other places they are divided into many; and all of these bundles of fibres are intertwined with each other, as is seen on attempting to tear their tissue. In this case, the tumor very frequently forms lobules of various sizes, both externally and in its interior. Between the lobules are membranous septa, from some one of which a tuft of fibres springs, and, after running for some distance, curves over, and

is inserted into another septum. These lobulated tumors with a soft fibrous structure often attain a very great size. In some instances, however, there is no distinction of the tumor into lobules, but the whole growth is formed of one large tuft of fibres (having a radiated arrangement), and presents only a slightly uneven surface. These growths are extremely vascular, and their vessels follow the same arrangement as the fibres, observing a penicillous distribution through the interior of the structure, and forming a vascular network on its blood-red ulcerated surface. Occasionally, the substance of the growth is transparent, like jelly." 67.

This circumstance it was that induced M. Müller to name the disease carcinoma hyalinum. But transparency is not a constant character, and the term fasciculatum is therefore preferable. The form of disease seems pretty frequent.

The fibres of carcinoma fasciculatum are extremely pale and transparent, so that it is only by damping the light very much that they can be distinctly seen under the microscope. Their surface is beset here and there with granules, as with an incrustation. M. Müller cannot say whether softness is an invariable character of carcinoma fasciculatum.

He adds :—In organs affected with cancer, fibrous masses may often be observed, which differ greatly from this fasciculated form of carcinoma; while, in the firmness of their substance and in the complete entanglement of the bundles of fibres of which they are composed, they resemble the benignant fibrous tumors of the uterus, and of other parts. The author once saw such masses in the substance of the uterus, in a case of carcinoma uteri. Sometimes the skin covering cancer of the breast becomes thickened, is rendered more dense than natural, and displays, when divided, a similar complicated intertexture of fibres. Lastly, in cases of cancer of the stomach, in addition to the striated appearance which the swollen muscular coat of that organ usually presents when divided, the author has frequently noticed membranous capsules, containing masses made up of bundles of fibres all arranged in one direction.

Development and Softening of Carcinoma.

The development of cancer is best studied at present in carcinoma alveolare. This contains within its cells entire generations of younger cells, all of which (as Schwann has shewn to be the case in the early growth of cartilage, and of the chorda dorsalis) are produced from cystoblasts, which, from their large size and dark yellow colour, are easily distinguishable in carcinoma alveolare. The process of development of the other forms of carcinoma cannot be described with the same certainty. On their development, therefore, we need not enter.

In tumors, says M. Müller, with caudate corpuscles, these bodies are evidently formed from cells with nuclei; for in all growths of this class, the author observed, in addition to the caudate or spindle-shaped corpuscles, a few cells with granular contents more or less evident, often with a distinct nucleus. This form of cell obtains in all parts of the growth which have not a distinctly fibrous structure. Moreover, the spheroidal cells pass into the caudate by imperceptible transitions, while the caudate corpuscles be-

come in their turn transformed into fibres, and are themselves the lowest grade of fibrous structure.

Softening and inflammation are the precursors of the ulcerated state of scirrhus. Sometimes they occur first at one part of the tumor, at other times at another; but the statement that they always commence in the interior is quite unfounded. Often, as in the case of carcinoma mammæ, softening begins in the interior, where cavities are frequently found, filled either with a moderately firm or semi-fluid matter. The more consistent matter is the substance of cancer in a state of softening.

"The author ascertained this to be the case in carcinoma reticulare, and he likewise observed, some time since, that the white globules which constitute the peculiar network of that structure not merely accumulate during the progress of the disease, but likewise form a main part of the disorganised mass when softening commences. The softened matter, which resembles pus in its appearance, is either contained within large or small cavities, which, in some instances, communicate with each other; or, in cancer of the mammary gland, it occupies the lactiferous tubes and lymphatic vessels, from the divided cavities of which it exudes on pressure." 71.

In other instances, he continues, the softening and disorganization commence on the surface, as is invariably the case in carcinoma alveolare of the stomach, in which the innermost layer pours out the jelly-like contents of its cells into the stomach. This also takes place sometimes in carcinoma simplex, and in carcinoma reticulare of the mammary gland. The ulcerated surface either shoots forth a cancerous fungus, or destruction and disorganization proceed on the surface, unattended by formation of new growths. The latter is often the case in carcinoma of the face; more rarely in carcinoma mammæ. An ulceration with an indurated circumference forms on the surface of the hardened mass, and from this ulceration the different elements of cancer are discharged. M. Müller seems to think it probable, with Henle, that, in all cases of vascular granulations of suppurating surfaces, portions of the real substance of the part enter into the formation of the pus. He observes that the surface of an ulcerated carcinoma presents the same structure as the rest of the morbid growth.

Occasionally, ulcerated carcinoma of the breast cicatrizes a short time before death. According to M. Pouteau, such scirrhi are particularly intractable.

Chemical Properties of Carcinoma.

Cold water extracts from carcinomatous growths, when recent, a small quantity of soluble albumen and osmazome; but by far the greater proportion of their substance is formed of a substance resembling albumen, and insoluble by boiling. Several chemists have asserted that gelatine is a component of carcinoma, but M. Müller is of opinion that it results, at all events in a great degree, from the cellular tissue engaged in it.

Caseine is always found in carcinomatous tumors of the breast, and is probably not to be attributed to milk in the remains of the lactiferous tubes, since M. Boutin Limousineau detected it in carcinoma alveolare pultaceum, and the author obtained it from fungus medullaris of the kidney, as also from many other morbid growths. The existence of caseine in decoctions of car-

cinoma and of fungus medullaris was proved beyond doubt by several experiments which M. Müller relates, but which we need not particularise.

"With regard to the fat contained in carcinoma, Collard de Martigny speaks of a soft fat in scirrhus of the breast; Wiggers, of fat, containing phosphorus, in fungus medullaris. On the other hand, Gugert detected cholesterine in a fungus medullaris of the eye; Breschet found it in a scirrhus, and Lassaigne in carcinomatous ulcers of the intestine and mesocolon of the horse. Cholesterine is likewise present in many non-carcinomatous pathological structures." 78.

Nature of Carcinoma.

Having gone, almost literally, through the preceding laborious observations of our author, we conclude his account of carcinoma and the present article, by a summary of the results to which his inquiries have led. They are presented in the shape of ten distinct propositions which we shall take, as he offers them, in order.

1. Carcinoma differs from simple induration not only in its nature, but also in its structure.

M. Müller thinks there can be no doubt of this, though C. Wenzel laboured to prove that scirrhus and induration are identical, and that carcinoma is merely inflammation in indurated parts. The affinity, however, between scirrhus and fungus medullaris, and the absence of induration in the latter, seem sufficient, of themselves, to upset this notion, were there no other arguments against it. M. V. Walther has ingeniously remarked that induration is the result of a cause which, in occasioning it, has ceased to act—scirrhus the product of a cause still in operation. M. Müller adds:—This opinion is quite supported by minute examination. Not merely does carcinoma simplex, or scirrhus, develop itself without inflammation, but its structure differs from the very first from that of simple induration. Exuded fibrine always has the same appearance, whether it forms false membranes on the surface of organs, or whether it is deposited in their tissue so as to cause induration. Recent exudations do, indeed, contain small globules, but no cellular globules with germs of new cells.

The translator, however, remarks on this in a note:—

"It does appear doubtful whether we are warranted in laying down so positively as is here done, by Professor Müller, the distinction between carcinoma and induration. Dr. Henle remarks on this subject, that fibrinous exudations contain not merely globules, but also cells, which, though not furnished with germs of young cells, contain the characteristic nuclei, and at an early period become elongated, and transformed into fibres of cellular tissue, such as constitute the cicatrices of ulcers, &c." 80.

2. Carcinoma differs also in its nature from ulcerations of indurated parts.

On this point we feel disposed to cite M. Müller's criticism upon Andral, for it exposes, we think justly, a cardinal error of the French school. It is astonishing, indeed, considering their merits as pathologists, how inaccurate the ideas of the French are on the subject of cancerous diseases.

"Wenzel denies that there is any important difference between ulcerations of indurated parts and ulcerated carcinoma; and Andral even asserts, that

the products of all morbid secreting and nutritive processes become cancerous in the stage at which they pass into progressively increasing ulceration. This mode of expression is altogether metaphorical, and belongs, like the word inflammation, entirely to the infancy of science: it does but indicate the common result of very different changes of structure, not one disease *sui generis*; and, did it not emanate from a very distinguished and meritorious writer, it might be passed over without further comment. This confounding of diseases, definite in character, and destructive from their very commencement, with others which prove fatal only by loss of the fluids, and by disturbance of sanguification, seems to the author to be as little of an advance in science, as is that revolution which Andral has sought to bring about in the doctrine of inflammation by his notions about hyperæmia. Most ulcers of a non-carcinomatous nature are ulcers in indurated parts, for exudations often take place in the circumference of abscesses and of ulcers, and thus cause induration of the surrounding parts. Henle's investigations, indeed, have shewn that the granulations of ulcerated surfaces of all sorts are composed of cells resembling those in the tissues of the embryo. This, cannot however, be adduced in proof of the similarity of carcinoma and of ulcers in indurated parts, for most benignant tumors are also made up of embryonic cells. Rather, may we say, that the nature of both morbid structures is physiologically different in regard to the productive and destructive powers which each possesses. It is only in carcinoma that the most dissimilar tissues of parts become transformed into tissues identical with those which form the morbid growth." 81.

3. *Carcinoma is no heterologous structure, and the minutest elements of its tissue do not differ in any important respect from the constituents of benignant growths, and of the primitive tissues of the embryo.*

This seems a startling assertion, and must take many by surprise, as well as, perhaps, occasion some mortification to those who have confided in the advances of morbid anatomy in the department of the morbid growths. M. Müller, however, supports his proposition thus;—

"The elements of carcinoma are nuclei, cells, caudate corpuscles which are developed from cells, and fibres which are formed from caudate corpuscles. No other elements occur in benignant tumors. The gelatine-yielding enchondroma and the albuminous sarcoma consist of cells; sarcoma with caudate corpuscles contains the same elements as the corresponding form of fungus medullaris. The gelatine-yielding cellulo-fibrous tumor, the gelatine-yielding tendino-fibrous or desmoid tumor, and the albumino-fibrous tumor, are all, like carcinoma fasciculatum, composed of fibres. The pigment cells of melanosis are repetitions of healthy pigment cells. The peculiar appearance of the white corpuscles in carcinoma reticulatum, and their reticulated arrangement, occurring as they do in but one form of carcinoma, do not warrant us in founding thereon any theory of the heterology of cancer." 81.

The translator remarks that Henle objects to this argument of Müller's. He doubts the adequacy of microscopic and chemical investigations, and thinks that the development of cells, apparently resembling each other, into tissues physiologically dissimilar, must be owing to some difference which we cannot appreciate in their component organic matter. However that may be, and the supposition is a reasonable one, it is clear that we have no right, at the present time, to assert the existence of structural differences, when our most laborious researches can prove none, and the plain confession of ignorance and uncertainty is better than the assumption of knowledge.

4. *Neither does Carcinoma (independently of the sunies) possess any peculiar chemical constituents.*

The materials observed in carcinoma are albumen, gelatine, caseine, a matter resembling salivary matter, and fat, one form of which is cholesterine. These, however, are all contained in many other non-carcinomatous growths.

5. *The peculiar nature of the destructive and productive activity of carcinoma does, however, determine in it general anatomical characters which may, in most cases, be distinguished with the naked eye.*

Among these, says M. Müller, may be reckoned the removal and dissolution of the elements of the affected organs; the transformation of muscles, tendons, nerves, and membranes into the same new mass; the peculiar grouping of the elements of carcinomatous growths, the cerebriform softness of medullary sarcoma, the reticulum of carcinoma reticulare, the production of pigment with the destructive development of melanosis, the peculiar structure of carcinoma alveolare with the same destructive tendency, and others which might be mentioned. Thus may fungus medullaris with caudate corpuscles be distinguished from the corresponding benignant sarcoma, for the latter leaves untouched the different structures in or near the affected organ. A benignant sarcoma of the conjunctiva, though as large as the fist, left the globe of the eye unaltered; while a much smaller carcinomatous growth in the same neighbourhood would occasion the nerves, muscles, and tunics of the eye to swell, and to develop the peculiar morbid structure.

This brings us back, we fancy, to where we were before the microscope and chemistry were applied to the analysis of carcinoma. We must study the general characters, and make ourselves as well acquainted with them as we can.

6. *The development of carcinoma is the result of a diseased state of the vegetative process; which, whether general or local in the first instance, always tends to involve the whole constitution.*

Unfortunately this needs no proof.

7. *Although in most instances a general disposition to carcinoma exists from the time of its commencement as a local disease, yet it must be owned that a local disposition may give rise to carcinoma, which may afterwards contaminate the whole constitution; and this local disposition has been proved to be, in some instances, the result of certain external agents.*

There is little doubt of the correctness of this statement—the difficulty is to apply it to individual cases. M. Müller is convinced that, in some very rare cases, true carcinoma has been cured by extirpation. He refers to some instances of reputed cure. But he justly observes, that it is not quite sure in these cases that the disease was carcinoma, for innocent tumors, when incompletely extirpated, very readily return. Cases which have been operated on once only, and then with perfect success, while the morbid growths have not been anatomically examined, must be left quite out of consideration, since diseases of all sorts have been extirpated for scirrhus and cancer. The following seem unobjectionable.

"The author's friend, Professor Pockels, says that once, from among many melancholy cases, he cured a true carcinoma of the breast by extirpation. In this instance, the structure of the tumor was considered by Professor Pockels to be identical with that already described as carcinoma reticulare. Professor Jüngken extirpated, from the orbit of a young woman, a compound carcinoma, partly made up of carcinoma reticulare, partly of carcinoma melanodes: two years have now elapsed since this operation, and the patient continues in perfect health; while other precisely similar cases have had a fatal termination. A carcinoma reticulare of the female breast, which was extirpated by M. v. Graefe, did not return till after the lapse of five years. The author examined the degeneration as it appeared in the breast last affected, and found it to be carcinoma reticulare." 85.

He alludes, with scepticism, to several reputed cures of fungus medullaris. The cases on which most dependence can be placed are those in which fungus medullaris of the globe of the eye retroceded, without any operation having been performed, before the cornea had become perforated. Such cases, indeed, are very rare.

M. Müller refers to chimney-sweepers' cancer, as affording the best instance of a disposition to carcinoma at first merely local, though afterwards tending to become general. He mentions, too, cancerous affections of the face and lip, which are sometimes cured by local treatment, and the malignity of which, must, in those instances, have consisted in a merely local disposition. He adds, that, it is very difficult, and not always possible, to distinguish, by any peculiarity of structure, cancer of the skin from neglected or mismanaged ulcers of that texture. Here the characteristic forms of cancer are very rare; in one only of many instances was the disease found to be carcinoma reticulare. In no part of the pathology of cancer are our notions more unsettled than in this instance. The mere malignity of a sore is insufficient to stamp on it the carcinomatous character, for then must herpes rodens be cancer. To the idea of a local cancerous affection belong the development of the disease from carcinomatous tubercles; the property, when left to itself, of destroying, without intermission, the structure of all tissues with which it meets, whether muscles, mucous membranes, or bones (the last without the phenomena of ordinary caries or necrosis); and, lastly, the property of giving rise to any of the various forms of carcinomatous degeneration. The diagnosis is still more difficult, if a non-carcinomatous ulceration of the skin should, from the supervention of a carcinomatous disposition, become converted into cancer, for then we lose the guide afforded by the origin of the disease from a carcinomatous tubercle.

M. Müller admits the impossibility of comprehending the mode in which the carcinomatous dyscrasia becomes developed from a merely local disposition. It can, however, he thinks, be easily understood, that, when once cells with a productive tendency have been formed, the reception of the germinal nuclei into the circulation may determine their distribution to some part predisposed to receive them, and may thus give rise to the formation of secondary tumors. He is not clear what importance is due to the appearance of masses of fungus medullaris within the cavities of large vessels, especially veins.

8. *Some tumors which by nature are not carcinomatous, and part of the*

character of which it is to remain local, may, under certain circumstances, originate the local disposition to cancer.

"Aneurism by anastomosis, and *nævi materni*, must be referred to this class; for. M. v. Walther has shewn that, under long-continued irritation from internal or external causes, they may be converted into fungoid growths possessed of properties similar to those of cancerous tumors. They are less susceptible than other parts of simple inflammation and its consequences." 90.

9. *Many structures differing from carcinoma have, on the other hand, even though repeatedly mismanaged, no inclination to assume the cancerous disposition; or, perhaps, they may be more correctly said to have no greater disposition to pass into the carcinomatous state, than is possessed by many other healthy tissues.*

To this class may be referred the simple fatty tumor, and the tendino-fibrous or desmoid tumor. M. Müller's observations would lead him to say, that the carcinomatous tendency is not greater in enchondroma, cholesteatoma, and in albuminous sarcoma and osteosarcoma (cellular sarcoma, sarcoma with caudate corpuscles, and fibrous sarcoma). Irritation and partial excision determine; indeed, an increased growth of these tumors; but if perfectly extirpated they cease to be reproduced, and if at any time they exert an injurious influence on the constitution, it is merely by the loss of fluids which they occasion.

10. *Each form of cancer occurs in persons of all ages, and in all organs, but some organs appear to be especially liable to carcinoma at certain periods of life.*

"It has already been long known that fungus medullaris occurs indifferently at all periods of life. Many instances have also occurred to the author which prove that carcinoma reticulare, the most common form of cancerous degeneration in the breast of females advanced in life, is a disease incidental to all ages. The author frequently saw it in the orbit of children, where he has also often met with carcinoma medullare. It is, therefore, incorrect to say, that the ordinary cancer of the breast holds, as a distinct form of cancer, any peculiar ætiological relation to the climacteric years in women; such a relation has reference to the organ attacked, not to the disease by which it is affected. The breast is, like the uterus, more frequently attacked by carcinoma at this period; but this form of cancer occurs at all periods of life.

The assertion has often been made, though without foundation, that certain tissues are affected by peculiar forms of carcinoma. It has, indeed, been allowed, that fungus medullaris may occur in all organs and tissues. In the orbit, it attacks indifferently all parts of the eye. Hence it is evident that the question, whether in this or the other case, the affection began in the optic nerve, or in the choroid coat, or in some other part of the eye, arises from an erroneous conception of the subject. It is true that in some cases the affection may be particularly well marked in this or in the other part; but there are instances in which the same degeneration becomes simultaneously evident in the muscles of the eye, in the sclerotic, choroid coat, optic nerve, and crystalline lens. Proofs of this are afforded by the numerous writings upon this subject, and the author can substantiate them from the results of his own observations on morbid growths, extirpated by M. Jüngken. Medullary sarcoma of the bones of the cranium, of the dura mater, and of the brain, sometimes originates in one of these parts, sometimes simultaneously in them all.

Carcinoma simplex, or scirrhus, has been said to be peculiar to glandular

structures. It is well known that it may appear in the bones at the same time with scirrhus in the breast, as well as after its extirpation." 92.

In a case of extremely hard scirrhus of the breast, the author observed formative globules precisely similar in some very hard tumors which grew from the cancellous structure of the ribs. In another instance, carcinoma fasciculatum was developed in the mammary gland, in the orbit, and in a cancerous fungus of the skin. Carcinoma alveolare and reticulare have likewise an universal distribution, and fungoid melanosis notoriously has so.

This completes our able author's account of Carcinoma. We believe that his observations are new to the majority of English readers, and we have therefore given them very much at length. However satisfactorily they may display his industry and his pathological sagacity, we fear they as satisfactorily shew how little microscopical and chemical investigations have hitherto done in clearing up the mystery that surrounds the malignant morbid growths. We cannot conscientiously say that they have added much to our substantial knowledge on the subject. But we are not to despair. Minute researches always leave us rather wiser than they found us, and often when discovery seems as remote as ever, it is actually impending. There ought to be no bounds to our exactness save what nature has made impassable.

We shall return, in our next number to M. Müller's work, and to the non-carcinomatous growths.

THE CYCLOPEDIA OF PRACTICAL SURGERY, EMBRACING A COMPLETE VIEW OF ALL THE DEPARTMENTS IN OPERATIVE MEDICINE. Edited by *William B. Costello*, M.D. Member of several Learned Societies, National and Foreign. Part V. London, Sherwood and Co.

THE Part before us opens with the conclusion of Mr. *Bennett Lucas's* article on Asphyxia. It displays both information and judgment, and it would be well were the injunctions contained in it carefully studied and acted on by the younger members of the profession.

Mr. Lucas dwells very forcibly and very properly on the dangers of insufflation, practised as rudely as it often, we might almost say generally, is.

Mr. Lucas joins in the now general condemnation of tracheotomy. He gives a brief account of the ingenious instrument of that most ingenious man, Mr. Read. It consists of a syringe or pump which contains by exact measurement fourteen cubic inches; a mouth-piece or guard; a flexible tube for removing the deteriorated air; a coil of metal tube, by which it is proposed to heat the atmospheric air previously to its introduction into the lungs; an Indian rubber bag which is air-proof, and is furnished with a stop-cock. With this apparatus a portion of the deteriorated air may be removed from the lungs in the following manner. The pipe of the mouth-guard is to be placed upon the tongue of the patient, and the guard pressed close to the lips by an assistant; one end of the tube is to be inserted into

the mouth-guard, and the other into the pump: the nostrils are then to be closed by an assistant to prevent the admission of air, and by cautiously working the pump not only deteriorated air, but also mucus or any other fluid, can be removed from the windpipe. After each stroke of the pump if the fingers be removed from the nostrils, the pure atmospheric air will instantly rush in.

Mr. Lucas is of opinion that the operation of the instrument will be most materially assisted by the application of Leroy's bandage. He would not, indeed, employ it without conjoining with it alternate pressure and relaxation on the parietes of the chest.

Friction, volatile stimuli to the nostrils, stimulating injections into the stomach, electricity, are all proper subsidiary measures. On electricity Mr. Lucas remarks:—A new method has been proposed by Leroy: he introduced acupuncture needles, one on either side, between the eighth and ninth ribs until they penetrated a short distance into the fibres of the diaphragm; he then completed the galvanic circle by means of a pile of twenty-five or thirty pairs of plates, one inch in diameter, when the diaphragm immediately contracted and depressed the abdominal viscera, and an inspiration was made. The circle was then interrupted, when the diaphragm, urged by the weight of the abdominal viscera, and assisted by a gentle pressure made on the abdomen by the hand, returned to its former position, and an expiration was accomplished. By alternately repeating these operations respiration was re-induced; but when a continuous current was applied, the respiratory movements were irregular. In the experiments of Leroy, which were witnessed by Majendie, animals were often resuscitated after five minutes' submersion by the application of galvanism in the manner just described. Electricity is hardly accessible in private practice, but at the stations for the reception of asphyxiated persons they should be kept and used in the most efficient manner.

Mr. L. states, in reference to the period of submersion in water, compatible with recovery, that it is difficult to lay down any rule by which it can be determined *à priori*, whether our attempts at restoration will be successful, beyond the signs which characterize the existence of total death. Whilst on the one hand, a few minutes' submersion has been sufficient to baffle the most energetic and well-directed measures of the practitioner in his attempts at re-animation, cases on the other hand are on record, where recovery has crowned his efforts after the body has been fifteen, twenty, and even thirty minutes in the water. The longest period recorded by the Humane Society, of recovery after submersion, is three-quarters of an hour.

After noticing in an interesting manner asphyxia from hanging, and observing that he found, after macerating the bones of a criminal that the dentata was fractured at the junction of its laminæ with its body, but, from the little displacement of the fractured pieces, no pressure could have been exerted upon the spinal chord; Mr. Lucas passes to asphyxia from the inhalation of carbonic acid gas. We need not follow him through his account of this, but merely state that Mr. Snow informed him, that he had inspired some pure carbonic acid gas, and that it only produced a tickling of the fauces.

Mr. Lucas thinks very favourably of the use of Mr. Read's apparatus in a case of this kind, its capability of exhausting the lungs appearing demonstrated. Its application, therefore, in those cases of suspended animation,

where a gas of the specific gravity of carbonic acid, is in large quantities in the lungs, cannot but be desirable for the purpose of removing a portion of this deleterious agent before sending into these organs pure atmospheric air, or even oxygen itself.

AUSCULTATION is treated shortly and succinctly by Dr. *Benson*. He notices its various applications—among others, that to the detection of calculus in the urinary bladder. The stethoscope may be applied to the pubes or sacrum. The loud clear sound, he says, of calculus, the dull sound of a fungus, and the sort of pumping noise occasioned by moving the sound about in an empty bladder, may be easily distinguished, one from the other, by mediate auscultation, though these different conditions often embarrass the surgeon who trusts to the touch alone.

Laennec had previously directed attention to auscultation of the tympanum, and as the subject of aural diseases is now attracting much attention, we are induced to resuscitate his observations. "If," writes Laennec, "we apply the stethoscope upon the mastoid process of the temporal bone, while the patient inspires forcibly with the nostril of the same side (the other being closed with the finger) we perceive a blowing sound, indicating the penetration of air into the mastoid cells. If there is any moisture in the Eustachian tube, or tympanum, we perceive a gurgling very like that of the mucous rattle; and if the mucus happens to obstruct the tube all sound ceases. From this and other analogous facts we may ascertain the patency, or obliteration, of the Eustachian tube, and may thus be enabled to determine more particularly the cases in which it is proper to attempt curing deafness by throwing injections into this, or by perforating the membrane of the tympanum."

AVULSION, meaning the forcible separation from each other of parts of the body which were previously, more or less, intimately united, is well handled by Dr. *Macfarlane*. He considers it under the heads of *accidental avulsion*, and *avulsion* employed as a *surgical* process.

He alludes, of course, to the circumstance which has long attracted attention—the little tendency to hæmorrhage displayed by lacerated arteries. He observes that the formation of the clot, necessarily occupying a certain time, can furnish no explanation—nor can the retraction of the artery exert much influence, because this is not nearly so complete as when the vessel is simply cut across. He thinks, and so do we, that the explanation of Bécларd is the most rational—namely that the obstruction to the hæmorrhage consists in the lacerated inequalities of the inner coat of the artery. Dr. *Macfarlane* has been enabled to verify this opinion by accurate examination, in two instances. One of the cases was admitted into the Glasgow Royal Infirmary; and the other occurred in private practice. In both, an arm was torn off by machinery. One lived twelve, and the other thirty hours. The inequality of the inner coat of the brachial artery from laceration extended up along the vessel about an inch and a half from its torn extremity. It was, in several places partially detached from the middle coat, so as to form several small projections, which almost completely filled the calibre of the vessel, and must have afforded not a single, but a series of obstructions, to the effusion of blood. In both cases the artery projected about an inch and

a quarter beyond the muscles; its extremity was ragged, and its cavity apparently obliterated, so that not a drop of blood escaped. No pulsation could be felt in the pendulous portion, but immediately above it was distinctly recognized. On dividing the artery close to the face of the stump, a jet of blood, corresponding to the size of the vessel, was thrown out, showing distinctly that the previous absence of hæmorrhage was to be attributed to the lacerated inner coat, and annular contraction of the artery.

Dr. Macfarlane points out the usual occurrence of severe shock to the nervous system, and its occasional absence. Sometimes there is wonderfully little pain.

"In the well-known case of Wood the miller, as detailed by Cheselden in the Philosophical Transactions, the arm was torn off, at the shoulder, with such velocity, that the patient was not aware of the accident till he saw his arm moving round on the wheel. A boy in a cotton-factory had his fingers entangled in the machinery, which was in rapid motion. The occurrence was immediately observed by an adult workman, who rushed to his assistance, but so incautiously, as to become himself the chief sufferer. The boy escaped with the loss of his fingers, and the man had his hand torn off above the wrist. He was aware of being injured, but did not know for some time that the hand which he saw hanging on the machinery was his own. A wealthy merchant of Glasgow was riding quickly on horseback, and the night being dark, he came suddenly upon a horse and cart on the road. He threw out his hand against the opposing horse to push it from him, and was not aware till he had gone to a considerable distance, that his thumb was torn off." 449.

Dr. Macfarlane notices the supervention in some instances of tetanus, in other instances, the occurrence of retention of urine. He notices, too, another consequence, by no means unimportant. The torn extremities of the nerves sometimes become the seat and source of excruciating and intractable pains. "This symptom," he adds, "we have uniformly observed after avulsion of the scalp, an accident occurring to women, and that not unfrequently, in our public works. There is at present in the infirmary a young woman who had about two-thirds of the scalp torn off, and the pericranium laid bare, her hair having been caught by machinery. The case is doing well; but she is subject, and has been so since the third or fourth day after the injury, to excruciating neuralgic pains of the head and face, especially on touching slightly the remaining portion of the scalp on the forehead and temples. Occasionally, these pains entirely disappear after the wound has cicatrized, in other cases, however, they continue ever after, and are a source of great suffering."

Surgical Avulsion he divides into *simple*, where it constitutes the whole procedure, as in the case of removal of a polypus—or *compound*, where it forms part of another operation. In the latter case it is had recourse to for the removal of deep or vascular parts, which might bleed too freely under excision. Dr. M. remarks, that it can only be safe to adopt this in surgical operations, when the vessels connected with the part to be removed are not of large size, or when they cannot be readily secured by a ligature, as in the extirpation of tumors from the axilla, or behind and below the angle of the jaw. It must be acknowledged, he subjoins, that hæmorrhage rarely happens, either as an immediate, or remote consequence, of the forcible extraction of deep-seated tumors, provided the torn vessels are surrounded by, and enabled deeply to bury themselves in, loose cellular texture. But it is otherwise,

when the tumor is situated near a bone, and is firmly adherent to muscular or fibrous texture, no layer of cellular tissue intervening. The force required for its removal from such a situation is not only greater, but the chances of hæmorrhage occurring are so increased, as to call for either the application of ligatures to the lacerated arteries, or the use of firm and steady pressure.

BALANITIS, or inflammation of the mucous membrane of the glans penis, and inner layer of the prepuce is a short article by Mr. *Henry James Johnson*.

After noticing the delicacy of the epithelium of the part, and observing that the extent of the prepuce varies greatly in different persons—in some it is so short that the glans is quite uncovered, in others the glans is partially covered, and in others, again, the prepuce is so long as to conceal the glans, or even to constitute “*phymosis*”—he goes on to say, that the longer the prepuce, *cæteris paribus*, the more irritable the mucous membrane, and the greater the liability to collection of the secretion of the sebaceous follicles.

The mucous membrane of the glans and prepuce is liable to inflammation, which may occupy a part or all of it, and may be acute or chronic.

Acute Balanitis. This generally comes on suddenly. There is a sense of itching, sometimes of smarting, rarely of sharp pain, within the foreskin, and particularly around the corona glandis. The prepuce is a little swollen, perhaps slightly reddened. From within it, there issues a puriform discharge, usually of dirty colour, often profuse, and sometimes offensive to the smell. It is generally thickened with sebaceous matter; occasionally it is thinner, and more like ordinary pus.

If *phymosis* exists, the discharge may be supposed to come from the urethra. Its orifice may pout, and the point of the glans may look red and tumid; but, on wiping it with lint, and making pressure along the course of the urethra, no matter is observed to issue from the latter, whilst similar pressure behind the corona, and on the glans itself, occasions its exit from the præputial orifice.

“It may be difficult,” says Mr. Johnson, “to determine whether the discharge proceeds from the surface of the mucous membrane, or from ulcerations behind the corona, or on the inner prepuce. But if ulcers exist, there is more tenderness on pressure; and when they have lasted for any length of time, hardness may commonly be felt. This latter symptom is not so characteristic as might, perhaps, be supposed. Warts behind the corona may co-exist with balanitis, and the sensation communicated to the finger, on making pressure from without, is so like what could result from indurated sores, that I have been more than once deceived by it.” 454.

If *phymosis* is not present, the diagnosis is easy, retraction of the prepuce exposing its inner layer and the glans, the seat of the disease. Partial abrasion of the mucous membrane, occasioning a remarkably patchy appearance, is frequently observed.

Balanitis may be attended with inflammatory complications, such as inflammation of the absorbents of the penis, inflammation and enlargement of the lymphatic glands, on the pubes, or in the groins; suppuration in the cellular membrane of the penis is occasionally, though rarely observed. The acute often ends in the chronic form—or (an extreme case) in extensive

warts, ulceration of the glans or of the prepuce, and even protrusion of the former through a morbid opening in the latter.

Causes of Balanitis.—The great predisposing cause is too long a prepuce, with acrid, if not retained, secretions. The act of connexion is usually the immediate cause. If the venereal orgasm is frequently repeated, or if the secretions of the female are morbid, the occurrence of the disorder becomes the more probable. Severe exertions, a long walk, local friction, however occasioned, all tend to produce it. Free living assists their operation. Substances which disagree with the stomach, and are apt to bring on urticaria or erythematous eruptions on the skin, may excite it. Mr. Johnson has seen it occasioned by copaiba. A debauch in some will give rise to it.

Treatment.—"If the prepuce admits of retraction, the whole mucous surface should be gently, but effectually, washed with warm water, so as to remove the secretion that adheres to it. Lint dipped in a solution of the liquor plumbi acetatis, of the strength of about two drachms to the pint of water, should then be applied, and retained. The lint should be changed twice or thrice daily, and the tepid ablution employed night and morning. Active aperients should be prescribed, and a cooling regimen, with quiet, should be recommended.

If there is phymosis, and the glans cannot be uncovered, warm water should be injected between it and the prepuce, so as to syringe out, as effectually as possible, the sebaceous matter. This should be followed by similar injections of the diluted liquor plumbi, and the latter ought to be repeated several times in the day."

For the inflammatory complications, leeches, evaporating lotions, anti-phlogistic means, in fact, are requisite. If an abscess forms, it must be opened. If it occurs just behind the corona, which it sometimes does, it is very small, often not much larger than a pea, rarely equal in size to a marble. A not unfrequent situation is contiguous to the frænum. It may fairly be presumed that these small abscesses are immediately connected with the sebaceous glands. When opened, either by nature or the lancet, the aperture is apt to continue fistulous. A fine heated wire, introduced once or twice, readily effects a cure.

Chronic Balanitis.—Acute balanitis can scarcely happen, unless the investment of the glans by the prepuce is considerable; but the chronic form is not uncommon when the foreskin does not cover more than a third of the glans. The complaint is usually limited to the inner layer of the prepuce contiguous to the corona, and the gutter immediately behind the latter.

This portion of the mucous membrane is red, tumefied, and moist. If there is much prepuce, the sebaceous secretion may collect; if there is little, with ordinary cleanliness, it will not. The surface is not usually abraded of epithelium; but after coition, or much exercise, or a debauch, it may become so. The tendency to "excoriations" in connexion, is marked; and this very tendency predisposes the individual to venereal sores. The subject of chronic balanitis can scarcely indulge in sexual intercourse, without either an abrasion, or ulceration, or some other consequence of the extreme irritability of the part.

The affected surface is generally tender to the touch, particularly after the excitement of coition; the small abscess behind the corona is common.

"When," says Mr. Johnson, "the disorder has lasted long, the mucous membrane behind the corona is thickened, warts are apt to spring up, the epithelium is easily abraded, and small ulcers, with a yellow surface, and slightly cupped,

are occasionally observed, independently of previous connexion. These ulcers appear to be similar to the sores that are not unfrequent on the mucous membranes of the lips and cheeks, and tongue, in persons with deranged digestive organs. They wear a similar aspect, looking as if a piece of mucous membrane had been picked out with the nail; and they are observed in similar states of constitution. However this may be, such sores on the prepuce do certainly arise spontaneously, and heal without entailing secondary symptoms. I have seen them mistaken for 'chancres,' and patients put unnecessarily on a course of mercury." 455.

Mr. J. thinks that persons with chronic balanitis are peculiarly prone to herpes of the prepuce.

Causes.—The essential one is too long a prepuce, the irritability of the mucous membrane occasioned by that being lit up into disease by excesses, dietetic or sexual.

Treatment.—This may be palliative or radical. The former consists in ablution with cold water every night and morning, the retention of lint behind the corona, dipped in the diluted liquor plumbi acetatis, or in a solution of the sulphate or acetate of zinc, an occasional application of the lunar caustic, in substance or solution, regulation of the secretions, and avoidance of excesses. If the cuticle is abraded, the black wash, or plain lime water, or a weak solution of the sulphate of zinc, will remedy it. The ulcers alluded to already should be lightly touched every second day with caustic, or dressed with the black-wash.

But these means are far from effectual. The least excess resuscitates the disorder. The only radical remedy is to be found in circumcision, or division of the prepuce. The operation is very successful. Circumcision is the most effectual, but it is the most severe. Division of the prepuce answers well enough.

BANDAGE is, we need not say, well done by Mr. Chapman. His account of the different forms of it is clear, and the illustrations are equally so. It is impossible, of course, to give any account of an article of this nature, useful as it is to the younger surgeon.

BLISTER is treated by Mr. Alexander Ure, a gentleman of great promise. We shall extract one or two passages from his paper.

The blistering property of the *meleœ vesicatorius*, from which our common blistering plaister is made, resides in a principle called cantharidine. Dissolved in oil, this has been recommended as a substitute for the ordinary *emplastrum cantharidis*; and M. Bretonneau assures us, that paper imbued with this solution acts with great promptitude and energy. It is said that a tincture prepared with three parts of powdered cantharides and eight of sulphuric ether, is capable of producing vesication in the short space of ten minutes. A blister of this sort is thus made by M. Trousseau:—

A piece of blotting-paper is cut of the form and size of the blister that is desired; it is applied upon a sheet of diachylon; and it imbibes some drops of the extract of cantharides by ether, and it is fixed upon the skin by means of the diachylon.

It appears to us that this is inferior in point of convenience, if not of effect, to the "solution of cantharides," at present much used in London.

It is an omission, perhaps, on the part of Mr. Ure, failing to take notice of it.

The *oil-silk dressing*, says Mr. Ure, may be used with advantage for blistered surfaces. An American writer has suggested the use of finely-carded cotton, which has also been found to answer well.*

"There is an ingenious contrivance for bandaging, which I have seen in Paris. It consists of a light shield, made of thin plated metal, or gum-elastic tissue, to one side of which a band of caoutchouc web is attached, provided at its extremity with a clasp, which fastens to the other side of the shield. These are called, according to the part to which they are adapted, *serre-bras*, *serre-cuisses*, &c. and are used to contain blisters, issues, &c." 477.

BLOODLETTING is of course cleverly written by Dr. *Wardrop*, assisted by Mr. *Costello*. It contains those views and practical directions, which we have already, on previous occasions, had the pleasure of fully noticing. We cannot go over the ground again, but must content ourselves with repeating the favourable opinions we have formerly expressed.

BONE, DISEASES OF, is a short article by Mr. *Spencer Wells*. He arranges these diseases in the following manner:—

1. Functional affections, or lesions of innervation.
2. Abnormal changes, the result of defect or excess in the nutritive or assimilative powers.
3. Simple and specific inflammation of bone, and its membranes, with the consequence of such inflammation.
4. Morbid growths, deposits, or formations.
5. Malignant diseases.

Speaking of *functional affections of bone*, Mr. Wells believes that their nervous sensibility may be so exalted as to render them incapable of affording support or resistance without pain. He speaks more particularly of the periosteum, and cites two cases where the perichondrium was the seat of this morbid irritability.

While noticing *hypertrophy of bone*, Mr. Wells observes:—it is very rare to find a bone lengthened from hypertrophy; there are, however, in the museum of St. Bartholomew's hospital, sections of two tibiæ so much elongated from this cause, that they have become considerably curved, in order to adapt themselves to the fibulæ, which remain of their natural length. The hypertrophy is confined principally to the cancellated structure.

BRONCHOTOMY is very carefully and completely handled by Mr. *Spencer Wells* also. The practical part of the article received the prize of the Dublin Medico-Chirurgical Society, for 1839. And it seems to us to have deserved it. As it is not long, however, since we devoted some space to Mr. Porter's work, we do not feel ourselves justified in re-entering on the subject at present.

* The late Dr. William Young, of Glasgow, was in the habit of applying this material. He assured the editor, that if the blister were removed when rubefaction was produced, and the cotton then applied, the vesication would follow equally well, with but little pain comparatively. In blistering young subjects he always had recourse to this plan.

Bubo is treated by Mr. Henry James Johnson. He commences by mentioning the common division of buboes into *specific* and *sympathetic*, and deferring the consideration of the former, limits his observations to the latter.

He gives a slight account of the *superficial* and *deep inguinal glands*—their position, and the quarters from which their lymphatics proceed. He observes that:—"it is not an uncommon circumstance, to find one or more lymphatic glands on the pubes, into which the lymphatics of the prepuce on the dorsum penis enter. The vasa efferentia of these pubic glands, pass, I believe, to the innermost of the inguinal. In inflammatory phymosis, and in acute gonorrhœa, the pubic glands are not unfrequently inflamed; more frequently, if I may trust my own experience, than the inguinal. An indurated absorbent may always be traced to them along the dorsum penis. It occasionally happens, as M. Cruveilhier has remarked, and as practical surgeons must have noticed, that the lymphatics of the penis and the scrotum avoid the glands which are most contiguous, and proceed to the lower ones in the neighbourhood of the saphena vein. A circumstance worth remembering, as it impugns the truth of the current belief, that irritations of the external organs of generation affect only the higher and more internal of the glands of the groin."

Mr. Johnson adds, that the anatomical facts he draws attention to, explain the liability of particular glands to sympathise with particular parts. Mr. Johnson has twice, after tying internal piles, seen smart inflammation of the inguinal glands. In one case, the glands alone were affected; in the other, that of a lady of a highly nervous temperament, the sub-peritoneal cellular tissue appeared to be extensively inflamed, and the irritation seemed to travel by *that* route to the glands in the crural canal.

Boils on the nates, or even a caustic issue in the loins, will give rise to enlargement of the external inguinal glands. In persons who have been subject to femoral hernia, some enlargement of the inguinal glands is not uncommon. The fact is worth mentioning, as inattention to it has led to embarrassment in the operation.

"The inguinal glands enlarge at times, independently of any appreciable irritation in the course of the lymphatics leading to them. In some instances, this would seem to depend on an injury inflicted on them. A person, for example, makes some violent exertion, or takes a long walk, and a bubo follows. Or he has connexion, and without the occurrence of excoriation, or of gonorrhœa, or of any kind of sore, there comes a bubo. No doubt, the greater number of what the French call the *bubons d'emblée*, and of what has been described as 'primary syphilitic bubo,' are no more than simple inflammatory enlargement of a lymphatic gland, occasioned by the mere exertion and excitement of coition." 527.

Mr. Johnson observes, that constitutional states exercise an important influence on both the production and the course of bubo. There are two conditions of the system, the scrofulous and the cachectic, which are more particularly prone to it. For practical purposes, he continues, it might not be amiss to look at bubo under three points of view; as it occurs in a person of a good constitution; or, in one of a scrofulous habit; or, in one of a cachectic—divisions of positive utility, however open to critical objections.

Bubo in a healthy habit.—We need not mention the characters of this,

but content ourselves with stating that it may end in *resolution*, *induration*, *suppuration*, or *sloughing*.

Suppuration.—Supposing this to occur, the swelling enlarges, partly from increase of the gland itself, principally from implication of the neighbouring cellular tissue,—a blush of redness appears upon the skin,—the latter becomes adherent to the gland beneath,—slight œdema, from serous effusion in the cellular membrane, precedes “bogginess,” from sero-purulent infiltration into it and into the gland—and fluctuation, from concentration of the fluid into one chamber, follows. Mr. Johnson remarks, that it is often hard to say, in the stage of “bogginess,” whether there is matter, or whether there is not.

We need not pursue the description of the progress of the abscess to pointing, nor of what occurs when it has given way. Mr. Johnson remarks that:—“Obstinate ulcerations and sinuses are more liable to happen if the patient persists in an injudicious amount of exercise, or in venereal or dietetic excesses. A carpenter had a sinus from bubo, in his right groin; it resisted setons, division, and every thing that I could think of, until he totally discontinued his employment. He had been much in the habit of sawing deal planks, with his right thigh flexed, and his knee pressing on the plank. It is a common enough occurrence for debauchees to continue venereal indulgences with sinuses in the groin, and I have seen these refuse to heal, till continence was submitted to. The gland seldom remains in a morbid state, so as to keep up irritation and ulceration in the parts about it, unless the patient is guilty of great negligence or impropriety. When this is the case, the gland may lie at the bottom of the sinus or beneath the ulcer, surrounded, perhaps, with diseased cellular membrane, itself partially disorganized, and acting like a foreign body.”

Sloughing.—Usually the patient or the surgeon is to blame if this occurs, at least to any extent. Mr. J. once saw a gland slough out completely. The patient, a young gentleman with a suppurating bubo, would go out for a hard day’s hunt.

Bubo in a scrofulous habit.—Mr. Johnson is disposed to advance the following positions:—

1. Persons of a decidedly scrofulous habit are particularly prone to bubo, and the tendency is to affection of several glands.
2. Bubo, when it occurs, goes through its stages with extreme dilatoriness.
3. Resolution is much less frequent than in the healthy. Induration is very common. Suppuration is common too.
4. When suppuration has occurred, the following condition of the parts is apt to supervene.

“A considerable swelling occupies the groin, sometimes pretty uniform, more frequently irregular upon its surface; the integument is of a bluish, and variegated, or, rather, of a brick-dust red: on pressure, the swelling feels remarkably boggy, elasticity, however, predominating in one part, œdematous pitting in another. Amidst the ‘bogginess’ and tumefaction, hard lumps may be distinguished, evidently indurated glands: the tenderness is usually inconsiderable, and the seeming amount of disease contrasts strongly with the general absence of pain. If the suppuration has been recent, there are ulcerated apertures, of greater or less size, leading, perhaps, to an exposed gland: if the case is more ancient, those apertures may have closed completely, or, which is more common, they have ended in sinuses, generally leading to a gland altered in its structure.

The discharge, when there is any, is thin, and I have seen it curdy. There is a strong disposition to repeated and partial attacks of suppuration. The duration of this morbid state is always prolonged, and sometimes to a great extent." 528.

At last, however, the swelling subsides, the sinuses close, and the enlargement of the glands may disappear.

Bubo in a cachectic habit.—The cachectic condition of system is usually brought on by the injudicious exhibition of mercury, though, in the lower classes, inadequate or improper nutriment and intemperance give birth to it.

The cachectic bubo, says Mr. Johnson, is characterised by the predominance of the suppurative and the ulcerative processes, and by a marked tendency to phagedæna or to sloughing.

Suppuration, when it occurs, is usually extensive; the skin is blue, and disposed to be widely thinned and undermined; the cellular membrane is involved to the same or a greater degree, the absence of the limitations to abscess in a healthy person being marked; the pain is frequently severe, although it is occasionally inconsiderable. Unless an opening be made pretty early, and not unfrequently in spite of every precaution, the skin ulcerates or sloughs freely; a large cavity, with sloughy-looking walls, and with diseased glands, more or less disclosed, is now laid open; granulations rise feebly and irregularly, ulcerating or sloughing, perhaps, after they are formed; the edges of the aperture may continue to ulcerate, and look picked and jagged; or they may ulcerate in one direction and granulate in another; the surrounding cellular membrane still suppurates irregularly or sloughs, so that sinuses open into the old cavity, or fresh ulcerations form in the skin.

A patient in this state is exposed to phagedæna or to gangrene. Any thing which tends to impair his powers may induce the one or the other; and mercury, especially, will do so. But sometimes an irritating application has the same effect. He has seen paring the edges of a cachectic bubo bring on phagedæna, and ulceration of the femoral artery.

The more usual course of cachectic bubo is to lapse into a chronic state. The cavity granulates to a certain extent, its size being proportionally diminished; but the granulations are unhealthy, dark, imperfectly organized, disappearing, or even sloughing readily; the gland is probably still diseased, and often palpably is so; the discharge is thin, copious, and irritating; the edges of the sore, either callous or ulcerating fretfully; the surrounding skin blueish; and the cellular membrane thickened, or traversed by sinuses, or morbid in some other fashion.

But even these cases are curable sooner or later.

Treatment.—Confining his attention to the non-specific form of *Bubo*, Mr. Johnson divides it into *general* and *local*. On the former we have not space to dwell.

The *local treatment* will vary as the bubo is in its formative stage, or in that of induration, or of suppuration, or of ulceration. And the *kind* of bubo will modify it also. Leeches, evaporating lotions, or hot fomentations and even poultices are means adapted for the first stage. Mr. Johnson has thought that leeches were of more benefit, when placed around than on the inflamed glands. The leeches may be repeated, if the inflammation continues, or augments, and if they seem to be of service; for sometimes they aggravate the tenderness and swelling, and obviously disagree. In scrofulous and cachectic patients, leeches must be used more sparingly, or even

avoided altogether. Supposing that these means fail to induce resolution, the best chance of obviating suppuration is from exciting irritation on the surface. This, Mr. Johnson believes, is best done by a blister, either in its ordinary form, or in that of the liquor lyttæ. He has, on several occasions, seen a bubo apparently *certain* to suppurate, resolved by one or two blisters. The nitrate of silver has been used for the same purpose, by the late Dr. Wallace, of Dublin—and the sulphate of copper, the chloride of zinc, the tincture of iodine, the bichloride of mercury, &c., have been employed with the same view.

Local Treatment of Indurated Bubo.—Leeches and cold lotions are generally useless, or worse. Warm applications, more particularly poultices, are occasionally beneficial, and a chronic bubo will now and then subside under incessant poulticing, which has resisted more active measures. Perhaps what are called discutient plaisters, act more by maintaining warmth and moisture than by any more recondite virtues; and the mercurial plaister, the iodine plaister, the emplastrum ammoniaci cum hydrargyro, have all had their patrons, and have all been of service. Stimulating liniments and ointments, such as the ointment of the iodide of potassium, of mercury, of the tartar emetic in a weak form, may be resorted to. And decided irritation of the surface by the tincture of iodine, by the nitrate of silver, by blisters, &c. is frequently very desirable. Mr. Johnson has seen both good and harm from compression. But indurated bubo will sometimes remain long, and inflame and suppurate at last. Perhaps this is a good thing. A blister will sometimes flog up the indolent action, and determine the formation of pus.

Local Treatment of Suppurating Bubo.—If resolution is clearly unattainable, it is best to accelerate suppuration. The blister, which, perhaps has been applied with the view of dispersing the enlargement, will generally, if it fails in that, expedite the suppurative process. When this has occurred, the following points present themselves for consideration:—1st. Is it better to make an artificial, or to wait for a natural opening? 2. Is an opening by a cutting instrument, or one by caustic preferable? 3. Shall we practise an early opening or a late, a small or a free one?

1. Generally the abscess should not be allowed to give way spontaneously. But in the scrofulous bubo, where small foci of suppuration are often forming, and the cellular membrane is a good deal implicated, the case often does better without the lancet than with it. The frequent incisions worry the patient, and seem to irritate the skin.

2. Mr. Johnson thinks that there are few cases in which an opening by caustic is justifiable. If a judicious opening relieves all tension, and properly evacuates the matter, the thin blue skin, even of the cachectic bubo (for few would dream of employing caustic in the simple or the scrofulous varieties,) will revive marvellously under generous diet, and stimulants, and tonics, accompanied with appropriate local management.

“I confess that my predilections are rather for early openings. Even in the stage which precedes the perfect formation of pus, and its collection into a single cavity, a moderately free opening has frequently appeared to me to check the progress of the bubo, and materially limit its extent. And several considerations seem to be in favour of this opinion; for, if the bubo depend upon a single gland, it is difficult to understand what objection can lie against an early

incision, one that only anticipates what *must* come a little later; and, on the other hand, if several glands are affected, to delay operating would be to offer a premium on a large abscess, a troublesome sore, and a protracted cure, when two or three small incisions might economise both skin and time." 532.

In the scrofulous bubo, we need not be in any hurry to operate.

An early opening almost implies that it is not, or need not be, a large one. Mr. Johnson observes, on the *mode* of making the incision:—"It has appeared to me that something has been gained by attending to the following circumstances:—*First*, to make the puncture in as dependent a part as possible of the general or particular cavity laid open; *secondly*, so to direct the incision that the necessary movement of the limb may not pull the edges asunder; if the abscess be very small, a vertical incision answers best; if larger, it should be oblique, forming an angle of forty degrees, or thereabouts, with the ligament of Poupart.

It not unfrequently happens, that a cavity of some size presents, as it were, two chambers, connected by a more constricted portion. The skin is thin, and an opening is necessary in two places, separated by a greater or less interval from one another. The intermediate part of the cavity does not close with readiness, and it may be requisite at a later period to lay the two openings into one. But I have often gained time, and saved skin, by passing a seton of calico or linen rag, in the first instance, from one opening to the other." Of course the seton tape is only loosely passed, and it may be employed where the patient is anxious to avoid a large scar, or where, from the size of the cavity, we are unwilling to sacrifice skin.

In the cachectic bubo the incisions must often be more free than in the other forms; the cavity being larger, and the skin more undermined. The surgeon should, on this account, take care not to wait too long before he has recourse to the knife.

We need not follow our author into the management of the bubo after the opening, Mr. Johnson remarks on the *local treatment of Sinuses*;—"If these are immediately beneath the skin, and of moderate extent, the simplest plan is to lay them open. But if very long, a seton is preferable; or they may be incised to a convenient extent, and a seton passed through the remainder. If a sinus passes deep, as it sometimes will, it cannot be laid open properly. Injections of a *very* strong solution of the nitrate of silver, or, as Sir Benjamin Brodie, has advised, the introduction of a probe coated with a thin film of it, or a bougie smeared with the nitrate of silver ointment, have all been found to succeed." It is useless, or worse, attempting to heal a sinus leading to a diseased gland or altered cellular tissue.

Speaking of *diseased glands*, which in scrofulous and cachectic buboes, may sometimes be seen in the shape of pale-coloured projections at the bottom of suppurating cavities, or the cavity may be partly formed at their expense, or, lastly, such a gland may form the termination of a sinus, Mr. Johnson observes, that occasionally the gland is so disorganized that it sloughs away, or may be pulled away, but more frequently it is firmly fixed, and either bits only are separated, or, what is quite as frequent, the gland gradually regains its normal state.

BURNS AND SCALDS are commenced by Mr. *Alexander Ure*. As the article will be continued in the next Part, we shall defer, till that appears, our notice of it.

THE ANATOMY OF SUICIDE. By *Forbes Winslow*, M.R.C.S.
Author of "Physic and Physicians." Octavo, pp. 339. Ren-
shaw, London. 1840.

THE name of Winslow has long been honorably associated with the word "ANATOMY"—but not the "Anatomy of Suicide." A non-medical friend of ours took up the volume from our table and seemed surprized at the word "Anatomy;" but we soon convinced him of its propriety, by handing to him Burton's "ANATOMY of Melancholy." And indeed the book before us often reminded us of old Burton, by the variety and extent of the author's researches, and the amusing manner in which he has contrived to handle a most triste and repulsive subject. The nucleus of the volume formed a paper read at the Westminster Medical Society, and there excited great interest and protracted discussion. The subject is now developed to a very great extent, and illustrated by examples culled from all periods of history, ancient and modern. It is clearly the object of the author to prove, or at least render extremely probable, that *all* acts of suicide are committed under the influence of temporary insanity, partial or general. In this case, as in many others, the dispute is caused by the different definitions or interpretations of particular words. Thus, if every obliquity of intellect from the normal medium—every eccentricity of opinion—every crime against nature—every deviation from moral rectitude—every false notion entertained of our duty to God and man, be considered as grades or shades of insanity, why the door is thrown open enough to include suicide amongst the rest. But if we restrict the definition of insanity within the legal limits and the general acceptation of the word, we shall have great difficulty in bringing every case of suicide within the range of insanity. There is no doubt but that the more charitable view of the crime is to attribute it to temporary obscuration of reason; and this seems to be the impression of coroners' juries generally; but in treating the subject philosophically and medically, we must not sacrifice truth and justice at the shrine of mercy.

It would require half the Journal to notice half of the examples, histories, illustrations, and records of suicide compressed into Mr. Winslow's volume; and, as we are sure it will have a wide circulation, we shall be brief in our review. The work is divided into sixteen chapters, and we shall first glance at the eleventh—"IS THE ACT OF SUICIDE THE RESULT OF INSANITY?" The author justly observes that no law of Nature is more universal than that of self-preservation. Yet how often do we see men pursuing courses which they are convinced must entail sufferings or even death. A passage is quoted by Mr. Winslow from Dr. Rowley, which contains as complete a piece of special pleading, as we can remember to have seen.

" 'Pain is an evil; death, the deprivation of every hope or comfort in this life. No man in his senses will burn, drown, or stab himself; for these all produce what are called evils; neither can any of these actions be executed without the probability of pain in the convulsive action or struggles of death. As no rational being will voluntarily give himself pain, or deprive himself of life, which certainly, while human beings preserve their senses, must be acknowledged evils, it follows that every one who commits suicide is indubitably non

compos mentis, *not able to reason justly*, but is under the influence of false images of the mind; and therefore suicide *should ever be considered an act of insanity*."—222.

Thus, then, every man who is "not able to reason justly," is insane! Why there is not one man in every ninety-nine, who is "able to reason justly." We now see that, with such definitions of insanity, an ingenious writer or special pleader may easily prove that every case of self-destruction shews the individual to have reasoned "*unjustly*," and consequently to have been labouring under mental aberration. The illustrations which Mr. Winslow adduces of the natural instinct with which man clings to life, are apt and striking. It is well known that Samuel Johnson had the most unconquerable horror of death; and we strongly suspect that his belief in Christianity was very weak; else how could a man be so dreadfully apprehensive of passing from mortality to immortality? The Duke of Montebello, when lying in the jaws of Death, implored Napoleon to save him, when the surgeon was unable to stanch the hæmorrhage. This argued superstition quite as much as love of life. He must have been an addle-headed general to believe that Napoleon had the power of arresting the hand of death!

The following passage will shew the opinion of Mr. Winslow on the question at the head of this chapter.

"Is the act of suicide an evidence of mental derangement? Before this question can be satisfactorily answered, it would be necessary for us to consider that vexata quæstio—what is insanity? Have we an unfailing standard to which to appeal; an infallible *test* by which we can ascertain, with anything like a proximity to truth, the sanity of any mind? Perhaps, if we were to assert that we considered it impossible to point out the line of demarcation which separates the confines of a sane and insane condition of the mind, we might lay ourselves open to an attack. Again, were we bold enough to proclaim our non-adherence to what is considered as the orthodox faith in this matter, and assert that we viewed every departure from a healthy tone of mind, whether in its intellectual or moral manifestations, as an evidence of insanity, we might still more expose ourselves to the merciless lash of the critic, yet these are the opinions to which we should feel most disposed to give our assent. We must make a marked distinction between insanity considered as a *legal* and as a *medical* question; and it is greatly owing to our not keeping this essential difference in mind that so much useless reasoning and vituperation has arisen." 227.

And Again:—

"If we examine attentively the majority of cases of suicide, we shall find that the unfortunate persons have laboured, either for some time previously or at the very moment, under depression of spirits, anxiety of mind, and other symptoms of cerebral derangement. Very few cases of suicide take place in which you cannot trace the existence of previous mental depression, produced either by physical or moral agents. It may be said that lowness of spirits is not insanity; certainly not, according to the *legal* definition of the term; but we may always be assured, that if mental anxiety or perturbation be more than commensurate with the exciting cause, it may be presumed that the individual is labouring under the incipient indications of insanity." 229.

Sir W. Ellis, indeed, expressly declares that "lowness of spirits, ought to be regarded and treated as insanity." In the course of a long experience we do not remember to have ever treated a case where the patient did

not complain, at one time or other, of "lowness of spirits"—hence, our practice has been exclusively among the insane, and we have every right to be admitted among the fraternity of mad doctors.

Mr. Winslow has certainly overturned, or greatly weakened some of the arguments adduced against his doctrine at the Westminster Medical Society.

"Was Cato perfectly sane when he sacrificed his life? We are disposed to think not. His whole conduct immediately preceding the last fatal act of his life evinces the extreme mental agitation under which he laboured; despair had taken possession of his faculties; the ambition and the hopes of years were prostrated in a moment to the dust, and to escape from a long life of tyranny, he perished on his own sword." 241.

The above argument, however, is far from being so strong as those urged in the cases of Colton, Romilly, and Castlereagh. It appears that Colton's life was embittered latterly by mental and physical sufferings, besides being involved in pecuniary difficulties. "His biographer states, that there was no doubt of Colton's insanity at the time of his death." In respect to Sir Samuel Romilly, we freely admit that the attempt which he made to restrain the hæmorrhage, after a certain quantity of blood had flowed, was a strong proof that he had laboured under cerebral congestion before the sad act took place. As for poor Lord Castlereagh, no man ever dreamt of his sanity of mind, even according to the limited and legal definition of insanity.

There is little doubt that the detection of the forgery of Rowley's poems, deranged the mind of poor Chatterton. At the time of his death he was in want of the common necessities of life, realizing the affecting picture of the poet:—

"Homeless, near a thousand homes he stood,
And near a thousand tables pined and wanted food."

"In forming an estimate of the condition of a person's mind who has committed suicide, the coroner and jury should make particular inquiries into the following points:—First, as to the state of mind for some time prior to the act. In many, and in fact, in all cases, if proper evidence can be obtained, it will be discovered that the person has laboured under depression of spirits, either resulting from physical or mental causes. Inquiry should be instituted as to the presence of any disease of the stomach or liver which may have operated injuriously on the mind. In many cases it will be found that the suicide has received at some period of his life a blow on his head, giving rise to cerebral injury, which may remain latent for a great length of time, and suddenly manifest itself. Is insanity, particularly suicidal insanity, in the family? What was the person's natural character? Was he liable to sudden bursts of passion? Had his mind been dwelling on the subject of suicide? Was he monomaniacal, or remarkable for any peculiar eccentricity? All these various but important questions should be carefully sifted, should the coroner entertain any doubts as to the presence of mental derangement in such cases." 245.

We are quite ready to admit the propriety of all these precautions, without, however, subscribing to the doctrine that suicide is always the result of insanity, in the common sense of the word.

Reverting back to the first chapter of the work, we agree with our author

that the examples of antiquity form no excuse for the act of suicide in modern times. The ancients considered death an eternal sleep, and consequently that we were not answerable in another world for acts done in the flesh. The Christian doctrine is different in all respects.

"The famous suicides of antiquity generally resulted from one of three causes:—First, it was practised by those who wished to avoid pain and personal suffering of body and mind; secondly, when a person considered the act as a necessary vindication of his honour; and thirdly, when life was sacrificed as an example to others." 2.

The first class, he thinks, is the most excusable. Pain, whether mental or corporeal, is a severe test of man's courage. Many persons have destroyed themselves to avoid falling into the hands of the enemy. The wife of Astrabal, and the celebrated Cleopatra are eminent examples. Demosthenes, Hannibal, Mithridates, and thousands of the ancients, put periods to their lives, and were applauded for the horrid act. Mr. Winslow enters into a long dissertation to prove that Cato was insane—that is, labouring under anxiety of mind, wounded pride, and lowness of spirits, when he stabbed himself. This we grant—provided Mr. W. admits that we are all insane at times.

"Two of the most distinguished men of antiquity who sacrificed their own lives were Brutus and Cassius. Before their battle with Cæsar on the plains of Philippi, these two warriors had a conversation on suicide. Cassius asked Brutus what his opinions were on the subject of self-destruction, provided fortune did not favour them in the contest in which they were about to be engaged. Brutus replied, that formerly he had embraced such sentiments as induced him to condemn Cato for killing himself; he deemed it an act of irreverence towards the gods, and that it was no evidence of courage. But, he continues, 'Now, in the midst of dangers, I am quite of another mind.' He then proceeds to tell Cassius of his determination to surrender up his life 'on the Ides of March.' He states no particular reasons for having changed his opinions on the subject of suicide. The issue of the battle is well known. Many things conspired to damp the courage of Cassius and Brutus. In imitation of Cæsar, Brutus made a public lustration for his army in the field, and during the ceremony an unlucky omen is said to have happened to Cassius. The garland he was to wear at the sacrifice was given to him the wrong side outwards; the person also who bore the golden image before Cassius stumbled, and the image fell to the ground. Several birds of prey hovered about his camp, and swarms of bees were seen within the trenches. Cassius, believing in the Epicurean philosophy, considered all these circumstances as disheartening omens of his fate. After the defeat of Cassius, he ordered his freedman to kill him, which he did by severing his head from his body.

Plutarch makes Brutus die most stoically. After having taken an affectionate leave of his friends, and having assured them that he was only angry with fortune for his country's sake, since he esteemed himself in his death more happy than his conquerors, he advised them to provide for their own safety. He then retired, and with the assistance of Strato, he ran his sword through his body." 11.

If this was madness "there was method in it." Petronius, the gay "*arbiter elegantiarum*," went to work as coolly as most of the ancients. He determined to indulge in a luxurious refinement of that death which he was preparing to encounter. He opened and closed his veins at pleasure—

slept during the intervals—or sauntered about and enjoyed the pleasures of conversation with his friends! Certes this example does not much strengthen the doctrine that suicide is always caused by insanity. Empedocles, the celebrated philosopher and poet, chose the crater of Etna for his tomb, and threw himself into it. We must close this seductive and amusing, though melancholy chapter, with the following extract.

“Ancient history affords us many noble examples of individuals who preferred voluntary death to dishonour and loss of character. If ever self-murder could be considered as in the slightest degree justifiable, it would be under such circumstances. Who cannot but honour the conduct of the noble virgins of Macedon, who threw themselves into the wells, and courted death, sooner than submit to the dishonourable proposals of the Roman governor! When Theoxena was pursued by the emissaries of Philip, king of Macedon, who had been guilty of murdering her first husband, she produced a dagger and a box of poison, and placing them before the crew of the ship in which she was endeavouring to make her escape, she said, ‘Death is now our only remedy and means of vengeance; let each take the method that best pleases himself of avoiding the tyrant’s pride, cruelty, and lust. Come on, my brave companions and family, seize the sword or drink of the cup, as you prefer an instantaneous or gradual death.’ Some fell on the sword, others drank the poison until death was effected. After Theoxena had accomplished her designs, she threw herself into the arms of her husband, and they both plunged into the sea.

There can be no doubt that the doctrines of the ancient philosophers, especially the stoics, greatly increased the practice of suicide. “A wise man,” says Diog. Laertius, “will quit life when oppressed with severe pains, or when deprived of any of his senses, or when labouring under desperate diseases.” SENECA defended suicide. “Does life please you? Live on. Does it not? Go from whence you came.” No vast wound is necessary. A mere puncture will secure your liberty! “You say it is a bad thing to be under the necessity of living;—but there is no necessity in the case. Thanks to the gods, nobody can be compelled to live.” These were the principles of the wise Seneca!

In the second chapter, Mr. W. examines modern apologies for suicide—especially the writings of Hume, Donne, Rousseau, De Stael, Montesquieu, Gibbon, Voltaire, &c. However these writers may disguise their sentiments, they all disbelieved in a future state of existence. Our own opinion is that no man ever advocated or committed suicide, who was not either a materialist or a madman. We see no reason why the materialist may not, and in his proper senses too, weigh carefully the pros and cons, as to life and death, and if he find the balance in favour of the latter, draw the razor across his throat, and thus rid himself of all his evils.

Mr. Winslow criticises keenly the writings of the above authors in favour of suicide, and shews their fallacy or sophistry. We think it needless, after what we have just said, to scan the doctrines of these celebrated sceptics.

The more we examine Mr. Winslow’s work, the more we are convinced of the impossibility of giving any thing like an analysis of it, so multitudinous are the topics, so elaborate the researches, and so terse the language. We can only dwell for a few minutes more on the last chapter—“Can SUICIDE be PREVENTED by LEGISLATIVE ENACTMENTS?”

"The only legitimate object for which punishment can be inflicted is the prevention of crime. 'Am I to be hanged for stealing a sheep?' said a criminal at the Old Bailey, addressing the bench. 'No,' replied the judge; 'you are not to be hanged for stealing a sheep, but *that sheep may not be stolen.*' Every punishment, argues Beccaria, which does not arise from absolute necessity is unjust. There should be a fixed proportion between crimes and punishments. Crimes are only to be estimated by the injury done to society; and the end of punishment is, to prevent the criminal from doing further injury, as well as to induce others from committing similar offences.

The act of suicide ought not to be considered as a crime in the legal definition of the term. It is not an offence that can be deemed cognizable by the civil magistrate. It is to be considered a sinful and vicious action. To punish suicide as a crime is to commit a solecism in legislation. The unfortunate individual, by the very act, of suicide, places himself beyond the vengeance of the law; he has anticipated its operation; he has rendered himself amenable to the highest tribunal—viz. that of his Creator; no penal enactments, however stringent, can affect him. What is the operation of the law under these circumstances? A verdict of *felo-de-se* is returned, and the innocent relations of the suicide are disgraced and branded with infamy, and that too on evidence of an *ex-parte* nature. It is unjust, inhuman, unnatural, and unchristian, that the law should punish the innocent family of the man who, in a moment of frenzy, terminates his own miserable existence. It was clearly established, that before the alteration in the law respecting suicide, the fear of being buried in a cross-road, and having a stake driven through the body, had no beneficial effect in decreasing the number of suicides; and the verdict of *felo-de-se*, now occasionally returned, is productive of no advantage whatever, and only injures the surviving relatives." 335.

It is a barbarous law no doubt, and is now nearly obsolete. But it is not the only barbarous law on our statute book. The man attainted with high treason forfeits his life, and his relatives are punished, after his death, by the forfeiture of his property, which ought to go to his heirs who have committed no crime. This is a still harder case than the other: for we much doubt whether the surviving relatives would not prefer a verdict of *felo-de-se* to that of *insanity*, than which is nothing more dreaded among families—the stain being a *physical* one, and considered, whether true or false, to be capable of extension by hereditary descent, which is not the case with a moral stain. The whole turns on the question—do these penalties and forfeitures act as checks on the commission of suicide and treason? In the *latter* case, it is probable that they do—in the *former*, we think they are almost entirely inefficacious. The following quotation will shew that solemn judges on the Bench have considered lunacy as nearly coeval with human nature, and the inevitable lot of every human being, at one or other time of life!

"If the mind be overpowered by 'grief, sickness, infirmity, or *other accident*,' as Sir Mathew Hale expresses it, the law presumes the existence of lunacy." 336.

Having shewn, then, that no penal law can prevent suicide, our author asks, is there no other means of staying the progress of the Act?

"In the prevention of suicide, too much stress cannot be laid on the importance of adopting a well-regulated, enlarged, and philosophic system of education, by which all the *moral* as well as the intellectual faculties will be

expanded and disciplined. The education of the intellect without any reference to the moral feelings is a species of instruction calculated to do an immense amount of injury. The tuition that addresses itself exclusively to the perceptive and reflective faculties is not the kind of education that will elevate the moral character of a people. Religion must be made the basis of all secular knowledge. We must be led to believe that the education which fits the possessor for another world is vastly superior to that which has relation only to the concerns of this life. We are no opponents to the diffusion of knowledge; but we are to that description of information which has only reference 'to the life that is, and not to that which is to be.' Such a system of instruction is of necessity defective, because it is partial in its operation. Teach a man his duty to God, as well as his obligations to his fellow-men; lead him to believe that his life is not his own; that disappointment and misery is the penalty of Adam's transgression, and one from which there is no hope of escaping; and, above all, inculcate a resignation to the decrees of Divine Providence. When life becomes a burden, when the mind is sinking under the weight of accumulated misfortunes, and no gleam of hope penetrates through the vista of futurity to gladden the heart, the intellect says, 'Commit suicide, and escape from a world of wretchedness and woe;' the moral principle says, 'Live; it is your duty to bear with resignation the afflictions that overwhelm you; let the moral influence of your example be reflected in the characters of those by whom you are surrounded.' " 338.

From a short chapter on the appearances after death in suicide, we make the following extract in conclusion.

" From an examination of the particulars of 1333 cases of persons who have committed suicide, and who have been examined after death, the following analysis is made. The particulars of the cases referred to are recorded in the works of Pinel, Esquirol, Falret, Foderé, Arntzenius, Schlegel, Burrows, Haslam, &c.

Thickness of cranium	150
No apparent structural change	100
Bony excrescences	50
Tumours in brain	10
Simple congestion	300
Disease of membranes	170
Disease of lungs	100
Softening of brain	100
Appearances of inflammation in brain ..	90
Disease of stomach	100
Disease of intestines	50
Disease of liver	80
Suppressed natural secretions	15
Disease of heart	10
Syphilitic disease	8

1333.

Accretions of the membranes of the brain are often found in suicides. The dura mater is often ossified, and the pia mater inflamed, and the arachnoid thickened. Osiander considers congestion of the vessels of the brain a frequent cause of suicide." 281.

Here we must close our very imperfect notice of a volume which does infinite credit to the head and the heart of the author.

Periscope;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

Notices of some New Works.

PAROCHIAL MEDICAL RELIEF, CONSIDERED IN A LETTER TO THE "POOR-LAW COMMISSIONERS," DEVELOPING AN ENTIRELY NEW SYSTEM OF MEDICAL REMUNERATION, ALIKE CONDUCTIVE TO THE INTERESTS OF THE RATE-PAYERS, THE WELL-BEING OF THE POOR, AND THE RESPECTABILITY OF THE PROFESSION. By *E. T. Meredith*, Member of the Royal College of Surgeons, London. Pp. 36. Highley, 1840.

THE question of Parochial Medical Relief has certainly lost nothing of its importance, and would appear to have lost little of its complexity. After all the evidence that has been taken, and the experience that has been obtained, we have before us what we believe to be a novel proposition, candidly urged and ingeniously supported by a gentleman who appears to be practically well acquainted with the subject.

When the Poor-Law Commissioners began their unjust and tyrannical crusade against the medical profession, we told them that it was no less impolitic than wrong, and would probably be as unsuccessful as impolitic. As if it were not enough to inflame the prejudices and outrage the feelings of the lower classes, they must array against the law which they misapplied, the influence of an insulted and a powerful profession. The Commissioners were warned of this, but they persisted in their contumelious course, and much of the difficulty which the Poor Law has encountered may be traced to their perverse, we might almost say their insolent, obstinacy.

No honourable man in the profession contends that medical relief to the poor should be looked on essentially as a medical question. It is in all its length and breadth the poor man's question. It affects him in the most vital way, for on its right solution hang his health and strength and life. If those on whose skill his fate depends are so insufficiently remunerated, that their interests lead them to neglect him, he knows enough to be well aware that neglected he *must* be. The motives that influence bodies of men are no secret, human nature is not altered by the lawyer's coif or the doctor's degree, and though individual instances of extraordinary, or, perhaps, quixotic benevolence, may stand out here and there beyond the common level of the feelings of the community, these must not be allowed to form the elements of selfish calculations.

The abominations of the "Tender System" have, we trust, passed away—the Commissioners, we hope, have ceased to protest that the minimum of medical remuneration is the maximum of perfection of the poor-law—well paid themselves for *their* philanthropy, they have been forced to the acknowledgment that the medical profession is to be no loser by its labours—and the problem which now waits solution is, how the public interest may fairly be consulted with a due regard to that of the poor and the profession. Like all

questions of detail this does not admit of a speedy, scarcely of a satisfactory settlement.

Without going into the various plans that have been latterly proposed, to most of which, indeed, we recently devoted some attention, we think it only right to bring Mr. Meredith's under the notice of our readers. As we cannot pretend to a nice or a practical acquaintance with this important matter, we shall content ourselves with bringing forward the main features of Mr. Meredith's proposals, and enabling our readers to form their own judgment upon them.

He entertains some strong objections to the system of paying by the *case*, and by *family tickets*. This plan, if persevered in, will, he is convinced, lay open a wide field for the exercise of intrigue, and prove a fertile source, nay, offer a premium upon the accomplishment, of fraud; for the object of the ill-paid medical officer will assuredly be to increase the number of applicants, and so *impose* on the rates; and the object of the relieving officer will be to protect the rates, and so *deprive* the sick poor of that relief to which the law entitles them. This conclusion may be questioned—it may be said that the character of the profession is above such a suspicion—that the relieving officer can have no motive for so abusing his trust;—nevertheless it must be admitted that the system is open to this most serious objection. How desirable then any plan must be that tends to relieve the profession from the imputation of selfish, mercenary, and faithless conduct—and the relieving officer from such an embarrassing position—and also removes the source of that interminable contention inseparable from such contingencies, and which cannot be otherwise than prejudicial to all parties interested in the contract.

Prior to developing his scheme of medical remuneration, Mr. Meredith is at the pains to define the duties of medical officers.

"The duties of medical officers to Unions, (trusses and unusual bandages being paid for at cost price,) should be to attend upon, and furnish all necessary medicines and surgical assistance, (including operations* and vaccination), to the sick *paupers*, disabled by accident or otherwise, residing in the Union, *upon their own application*; each officer certifying every case as it occurs, in his own district, to the relieving officer, who should as early as possible, visit the same, in order to detect any imposition that may be practised on the part of the applicant, and check any unnecessary attendance on the part of the medical officer;—an exception must be made of difficult midwifery cases, for which an *extra* fee of 10s. 6d. should be allowed;—other cases of sickness, or accident, happening to those not strictly paupers, and not being in the receipt of more than 14s. per week, but who have an order for medical relief from the relieving officer, or any authorised person, guardian, or overseer, should be equally attended to; these cases not being charged without producing the authorised orders. Others again whose income does not exceed 1l. 1s. a week, should be entitled to the same attendance, &c., by obtaining a loan ticket, for which they should pay 7s. 6d.; (if midwifery 10s. 6d. by giving one month's notice, and paying 5s. in advance; or 1l. 1s. on the emergency); to the relieving officer, to be paid by him to the medical officer, who will return the ticket as a receipt; these loan cases, of course, will not become chargeable to the Union, further than being considered as forming part of the annual average number of cases. In order to prevent any equivocation, as to the *cure* of a case, and repeated attacks of the same, or the accession of another disease, in the same person; I

* "I have seen no good reason alleged, why an extra fee should be allowed for operations—such however has been suggested by many, for whose opinions I entertain a high respect; notwithstanding which I cannot assent to their views on this occasion."

propose that a case should be considered as lasting three months, after the expiration of which, the application must be renewed, if the case continues, or a fresh illness arises, but the same individual should not be charged more than twice in the year. The medical officer should as now make a weekly return of the sick under his treatment, accompanied with such observations as the cases call for; which return should be examined by the Board, and certified by the Chairman as approved, or otherwise, as the case may be; but all other reports, involving opinions not *immediately* connected with cases under his care, he should not be expected to make, without receiving a proportionate fee for his trouble. Some provision should be made to ensure *promptitude*, in the execution of the necessary orders for extra diet, &c., issued by the medical officer;—this at present is badly arranged—would it not be well to allow the medical officer to send his orders direct to the parties contracting for the several articles, at least in those cases, where the applicants are receiving pauper relief? The medical districts should be limited to a surface of forty square miles; and no district should furnish on an average more than 600 cases, nor less than 50, annually; neither should a district of forty square miles exceed 300 cases annually—thirty miles 400, and other districts in the same proportion.* I have made no separate provision for attendance, &c., at the workhouse, believing the duties thereof may safely be included in the general arrangement."

The *Remuneration* of those officers is set forth in the following Propositions, which we find it utterly impossible to abridge.

"First,—That the Medical Officer should be remunerated by a 'fixed annual salary,' and a 'sum,'—proportioned to the number of cases attended during the year;—but, as the amount of this 'sum' cannot be ascertained before the end of the year, and as the payments are made quarterly, I would advise a portion, from three to five pounds less than the average, to be paid with the quarterly 'fixed salary,' leaving the balance to be adjusted at the last quarter when the total number of cases will be known.

Second,—That the 'fixed salary' should consist of two sums;—the first, depending upon the *extent* of the *district*, and the *progressive value* of the whole of the *cases* occurring therein, and which may be considered as 'mileage;' the second depending upon the annual *number* of cases, (the *value* and *number* being taken on an average of the three preceding years)† and which may be regarded as a 'per centage' on stock in trade.

The 'fixed salary' thus established will guarantee the medical officer from loss; (it is much to be feared that Boards of Guardians attach little import to this), the necessity of which will perhaps more readily be conceded, when I affirm that the expenses‡ incurred in conducting a country private practice of 300 cases

* "It has been proposed to found the calculation of the value of medical salaries, upon the extent of the district, and the amount of population; this principle, however, can never safely be applied, because the sickly, or healthful character of a district may be quite uninfluenced by the amount of its population; again, the population may be comparatively rich or poor.—An area of forty square miles I know is by many considered too extensive, but with the reservations here laid down I think the objection vanishes."

† "In adopting this system where the remuneration has been by a sole annual salary, the first year will necessarily be experimental in regard to the average, as the present returns will scarcely afford a just criterion of the number of bona-fide cases; taking this into consideration, I therefore think that *ONE FOURTH* of the reported cases may be safely and fairly deducted from the three preceding annual returns and the average taken on the remaining three fourths."

‡ These expenses do not include the CAPITAL sunk in education, &c. the interest on which cannot be estimated at less than £50. per annum."

annually, averaging 12s. 6d. per case; and still more apparent will the necessity be to guard against anything like risk, when it cannot be disguised, that as surely as the medical officer finds the chances running against him, so certainly will the poor be neglected.

Third,—That the 'milage' should be determined at a rate per square mile, progressively decreasing as the miles increase. That this rate should be such as to give for forty square miles of surface yielding 200 cases annually, the sum of £40.

A progressive rate is absolutely necessary, to afford a fair estimate of the value of the outlay and labour, required to work unequal surfaces; and the same is equally applicable in respect to unequal numbers of cases. I have assumed, that to work forty square miles of surface yielding 200 cases annually, it will be worth £40. Granting this,—which is but reasonable,—I find by arithmetical progression, that the value of the first mile descending, will be £1. 19s. 0½d. ¾f. and that the last will be only of the value of 11½d. ¾f. I shall perhaps better explain myself by the following example. If forty miles be worth £40. to work, twenty miles will be worth £29. 15s. 1½d. by progression, instead of £20, by simple proportion;—in the same ratio, ten miles will be worth £17. 6s. 4d.—and five miles £9. 5s. 4d. By the same rule the value of any given surface may be found.

Should this proportion be objected to, as not adapted to all circumstances, an uniform rate of £1. 5s. per square mile would best meet the difficulty, and would perhaps give more general satisfaction; at the same time I am rather inclined to adhere strictly to the progressive rate, as being far more equitable. For although certain expenses may be incidental to the performance of a given work, over a given surface, it does not follow that those expenses will preserve an equal or simple proportion to any other space, having the same duties, much less if those duties are not uniform. One horse may be equal to forty miles; but one horse must be had to do twenty;—therefore for working twenty miles, you ought to receive more than one half the value of forty miles, the expenses being nearly the same, notwithstanding, that the labour may be diminished exactly one half. I have said the 'milage' should have reference likewise, to the progressive value of the whole of the cases, (forming the 'fluctuating salary' which will be described hereafter), and this rather than simply to the number; inasmuch as each individual case will be of unequal value. To illustrate this, I assume 200 cases occurring in a district of forty square miles, for attendance on which, in that space, I allow £40. as 'milage,'—but as 200 cases will give £40. for forty miles, 300 cases would give £60. for the same space by simple proportion;—this, however, is too much, because the additional 100 cases, would not increase the expenses or labour, by one half; i. e. in the same proportion. I therefore say, let the 'milage' previously determined for any given surface, bear also a simple proportion to the progressive value of the whole number of cases; 200 being the standard for any district. I fix upon 200 because that number will average nearly 12s. per case* on the whole annual receipt in a district of forty square miles: which I consider as only a fair remuneration for the faithful attendance on, and the due supply of medicine (during one year) for, 200 bona-fide cases of sickness, or accident happening in a district of that extent; e. g. as £49. 19s. 4d. the progressive value of 200 cases, is to £67. 9s. 3d. the value of 300 cases; so will £40. the value of the milage for forty miles, with 200 cases, be to £54. 0s. 1½d. the value of the milage sought for forty miles, with 300 cases;—

(£49. 19s. 4d. : £67. 9s. 3d. : : £40. : £54. 0s. 1½d.).

* "It will rarely happen that the average per case will exceed 12s. 6d. if this however should appear to be PERMANENT, the district may be altered to meet the difficulty, or the 'per centage' may be reduced."

instead of £60, which simple proportion would give: the milage then for forty miles, averaging 300 cases annually, will be £54. Os. 1½d.; for the same space with 100 it will be £21. 19s. 11½d.

Fourth,—That the amount of the second portion of 'fixed salary,'—the 'per centage,'—should be estimated at the rate of £15. per cent. on the average annual number of cases.

This portion of the 'fixed salary' does not require a progressive rate, as the 'stock' in trade necessary to be kept, will nearly always bear a direct proportion to the number of cases. A valuable feature in the operation of this portion of 'fixed salary,' will be found in its reducing the *difference* of value between each case in the lowest degree, consistently with the value (£180.) of the whole 600 cases herein assumed; and yet the *difference* will be great enough to preserve the principle of the progressive rate,—e. g. the first of 600 cases according to this *joint system*, will be worth 8s. 11½d. $\frac{2}{3}$ ½f. and the last will be worth 3s. Od. $\frac{2}{3}$ ½f.;—according to *progression only*, the first of 600 cases will be worth 11s. 11½d. $\frac{2}{3}$ ½f., the last being of the value of $\frac{2}{3}$ ½f. This will appear more striking if we calculate upon 200 cases; the value of the first being, by my system, (avoiding fractions) 9s. and the last 7s. averaging 8s. per case;—by *progression only* the value of the first of 200 cases will be 12s. and the last 8s. averaging 10s. per case;—the difference between the first and the last case, in the first instance being 2s. and in the last 4s.

Should the estimates I have formed be considered too high, the per centage here advised may be reduced, but the integrity of the other financial parts must be preserved, at least so far as not to *reduce* the data on which they are founded.

Fifth,—That the remaining 'sum,'—which may very appropriately be called the 'fluctuating salary,'—should be ascertained by the same rule as was applied to the 'milage,'—i. e. the *value* of each case progressively decreasing as the number of cases increase; the amount of this 'sum together,' with that of the 'fixed salary,' jointly constituting the aggregate annual remuneration.

I have limited the number of cases which any district ought to supply, to the extent of that district: I likewise limit the number of cases which any one medical officer should have under his charge to 600 annually. These limitations I think most essential to the perfect working of this system, and therefore it is most important that they should be enforced as nearly as possible; this arrangement should not however preclude a firm from holding two districts; neither should it debar the same medical officer from the same privilege, provided the *two districts jointly*, do not transgress the limitations above set forth.

Supposing the 600 cases to occur in a town district, where the milage would be little or nothing;* I think £180. would be a fair compensation for attendance, &c. thereon, for one year, being at the rate of 6s. per case; this being a little more than the average expenses of dispensary practice; and less than the value of each case as estimated by the medical witnesses, in their evidence before the select Committee of the House of Commons.† The 'per centage' to conduct these 600 cases will amount to £90, this forming the 'fixed salary,'—leaving £90. (the progressive value of the cases), as the 'fluctuating salary.' Now, if 600 cases produce £90. each case progressively decreasing in value; the first case will be worth 5s. 11½d. $\frac{2}{3}$ ½f. and the last $\frac{2}{3}$ ½f.; the 'aggregate salary' then for 600 cases will stand thus:—

* " 'Milage' need not be allowed in districts whose area does not exceed two square miles."

† " See likewise the Petition of the medical practitioners in Gloucester, on the subject of payment per case. In reference to this valuable petition, I here take the opportunity of expressing my concurrence in its general prayer."

Fixed Salary..... £90.	} Aggregate Salary..... £180.
Fluctuating Salary £90.	

For 400 it will be :—

	£	s.	d.		£	s.	d.
Fixed Salary.....	60	0	0	} Aggregate Salary	139	19	4."
Fluctuating Salary	79	19	4				

Such is the scheme of Mr. Meredith, and we leave it in the hands of the professional public. It may be rather difficult to put in practice, but certainly it seems exceedingly fair to all parties.

ILLUSTRATIONS OF THE COMPARATIVE ANATOMY OF THE NERVOUS SYSTEM.
By *Joseph Swan*. Part V. Price 7s.

THIS admirable dissector and excellent comparative anatomist continues the work before us. It will form a valuable addition to our stock of facts in the anatomy of the nervous system, and must redound to the permanent reputation of its author. We regret the delay that has occurred in this brief notice of the present part. Better late than never.

There are two Plates (the 26th and 27th). The first exhibits the sympathetic nerve in the right side of the calf—the cervical part of the sympathetic of the fox—the abdominal plexus of the dog.

Mr. Swan makes some observations on the connexion between the thinking principle, whatever that may be, and the material organ, which we have much pleasure in noticing. It goes to disprove the popular and most injurious notion, that anatomical pursuits dispose to materialism in its gross and repulsive form.

"It has been stated," says, Mr. Swan, "that the basis of the nervous system is the nervous element modified by the different substances of the brain, the spinal marrow, and the ganglions; it must, however, approach to the nature of the immaterial being, as it forms the link which unites this with the material organs and through these with the material world, every part being duly sustained by the vital influence of the blood. But some portions of the nervous system minister to its power in a much greater degree than others, and particularly the convolutions of the brain, these are proportionate with the intellectual faculties, to which they give them a wider or more limited range, according to their development; they do not, however, form any part of the immaterial being, but are the mere instruments for its use and power, and necessary for its improvement and enlargement, for it remains mute and passive, exalted or debased, according to its neglect or cultivation, or improper use through these means. Besides the special influence admitted from the senses, it can, for particular purposes, through the material organs, call into action various parts of the body, and render these subservient to its power, in a manner unattainable by similar ones in animals, which are incapable of being raised above their natural state, except in a very slight degree."

"The brain," he goes on to say, his language perhaps being open to some objections, "is the medium through which the mechanical forms, admitted by the eye, are conducted, as well as the different forms of the air in sounds by the ear, and the influence of the organs of the other senses; but the power of comparing and arranging these impressions in thinking, is independent of the material organs, and is an operation of the mind. But although the mind may seem to have been produced, it has only been instructed, and had its powers made apparent through the healthy brain, receiving impressions from without,

and imparting others by the nerves to various organs of the body, and producing speech, writing and other accomplishments."

"The mind may seem to be annihilated by apoplexy, or to be perverted in madness, but these are only defects of manifestation, arising from a derangement of the parts of the brain forming the medium of communication between the immaterial being and the material world; it is possible, however, that the mind may be primarily disordered, and involve secondarily the material organs.

After the extinction of the nervous element at death, the immaterial being, or that termed *animus* by Cicero, still lives, but ceases to will or receive impressions through the material organs. '*Mihi quidem nunquam persuaderi potuit, animos, dum in corporibus essent mortalibus, vivere; cum exissent ex iis emori: nec verò tum animum esse insipientem, cum ex insipienti corpore evasisset; sed cum omni admixtione corporis liberatus, purus et integer esse cœpisset, tum esse sapientem.*'"

The second Plate shews us the connexion between the uterine and mammary nerves of the ass—the caudal nerves of the calf—the spinal marrow of the hedgehog—the spinal marrow of the baboon—the spinal marrow of the dog.

The dissections, from which the plates have been delineated, were evidently laborious and, no doubt, correct—the plates themselves are spiritedly got up. The letter-press contains much valuable information on the comparative anatomy of the brain, information of which we shall probably avail ourselves anon. We wish Mr. Swan health to pursue, and public patronage to crown his labours.

NOTICE SUR LE MONESIA.

Mr. Bernard-Derosne, a pharmacien of Paris, has drawn the attention of the profession to this substance, which is obtained from the bark of a tree growing in South America, and to which very wonderful virtues are ascribed. It was introduced into Europe by a French merchant under the name of monesia. It has been employed by several Parisian physicians for two years past, with, it is said, considerable success—especially in scrofulous affections. This bark is of a brown red colour, breaking short and smooth. The extract, as received from America, is nearly black—entirely soluble in water; its taste is at first sweetish, and afterwards astringent, leaving an acrimony long on the tongue. Internally it has been exhibited in bronchitis—hæmoptysis—phthisis—weakness of stomach—diarrhœa—enteritis (?)—leucorrhœa—menorrhagia—blennorrhagia—scrofula—scurvy. Externally in ulcers of various kinds—purulent ophthalmia—hæmorrhoids—ulcers—leucorrhœa.

In chronic bronchitis, the monesia has been administered sometimes alone, sometimes with opium. It appeared to promote expectoration and render the breathing freer. In several cases of hæmoptysis, where the hæmorrhage continued, and resisted other remedies, the monesia succeeded. Although it could not be expected to cure pulmonary consumption, it is said to have been useful in such cases, as a stomachic and expectorant. *Debility of stomach* is one of the maladies for which the monesia has been prescribed, and it is averred, with singular advantage, in doses of 16 grains daily of the extract. Chronic enteritis, as evinced by diarrhœa and pains in the line of the digestive tube, is enumerated among the diseases which have been benefitted by the present remedy. Passing over leucorrhœa, menorrhagia, blennorrhagia and scrofula, we are informed that, in ill-conditioned ulcers, the internal and external administration of monesia has been found very beneficial.

The best internal form of giving it is in pills made of the extract, the dose from twelve to thirty grains daily. For ulcers, the pomade is used—or the powdered extract sprinkled over the sores.

A MEMOIR ON EXTRA-UTERINE GESTATION. By Dr. *Wm. Campbell*, of Queen's College, Edinburgh, &c. &c. Edinburgh, Black ; Longman, London.

THE author of this memoir has been long known as a zealous and successful cultivator of obstetric science. During the many years he has devoted himself to this important division of medicine, he has shewn how earnestly he entered into the spirit of its duties both as a teacher and operator. In the parturient chamber, often the poorest and most destitute, when the best resources of the art are most urgently wanted, but most scantily supplied, he has long laboured with highly beneficial results to the afflicted, because he was armed in his endeavours, by the scientific application of means and unwearied humanity. In the lecture-room he has brought the abundant stores of a mind eager in the acquisition of knowledge, long occupied in accumulating, and arranging it, together with the power of communicating it agreeably and effectually to others, thus obeying, and in an important sense, the important injunction, to "do good and communicate." The many who have had the advantage of his public prelections know how deeply his mind is imbued with the learning and resource of his art, deduced from laborious study and close observation, quickened and polished by critical acuteness ; and his published works have proved them to the world.

In preceding publications Dr. Campbell occupied himself chiefly with great practical points in the female economy, endeavouring to shew in what manner and by what means its important maladies might best be combated. The work before us, though practical to a certain extent, is, from the nature of the affection handled, so only in a limited degree. Extra-uterine gestation, though scarcely in strict language deserving the name of disease, is one of the most fearful evils to which woman is exposed. The subject is shrouded in mystery, and is pregnant with interesting matter of a very powerful kind. It is therefore a seductive subject to the inquisitive mind, and highly worthy of investigation ; but it must be admitted, after all that has been attempted, that art supplies little in the way of remedy, and judging from the nature of things, never can accomplish much ; and that, in defiance of the best efforts of genius, backed by laborious research, it is, and is likely to continue, in a great measure, one of the curiosities—an absorbing and distressing one—of medical literature. Dr. Campbell, in this memoir, has brought together an immense amount of information on the subject. Every available light has been seized for its elucidation, and much pains have been taken so to arrange and convey the various streams, as to exhibit it in the clearest and most intelligible form. From the time of Albucasis to the present day, he has laid under contribution every appliance which could conduce to the object which he wished to accomplish ; and the whole shews the great extent of his labors, and how familiar he is with the matter he discusses. As a historical record of extra-uterine gestation, it appears to us complete ; and we may safely affirm that, in this respect at least, he has completely exhausted the subject.

We pass over the first section, that on embryology, to notice briefly the contents of the sections on the varieties of extra-uterine gestation, which, as might be expected from the obscurity involving the subject, have led to much doubt and disputation. Three or four distinctions, dependent on difference in the position occupied by the misplaced fœtus, have by many writers of note, such as Breschet, Meyer, Blundell, and Granville, been considered sufficient to express all that is known of the matter ; but Dezeimeris, in his love of precision, aided perhaps by love of display, proposes ten or eleven divisions ; while G. St. Hilaire admits but two, only one of which is included in the arrangement of the former author. Dr. C. says that "the arrangement of Dezeimeris is unnecessarily

minute, and in a practical point of view, useless; since a large majority of the varieties particularised by him cannot be recognised by any diagnostic marks we are acquainted with; and some in the remainder, though there be some symptoms which are very characteristic, yet these even, as must be conceded by every man who has studied the subject, are by no means infallible." He (Dr. C.) proposes the four following divisions of the affection, viz. ovarian, ovario-tubal, tubal, and tubo-uterine. For the adoption of this arrangement he adduces many pathological facts, and states his reasons fully and distinctly, and we are bound to say that the classification appears to us, as far as can be determined, correct, and therefore good. He excludes the ventral variety in the sense generally employed; believing that, in all cases of fœtation not within the uterus, the misplaced product is originally attached to some part of the uterine appendages, not precipitated into the abdominal space, and therefore left in isolated being; and for this belief we think he has offered sufficient arguments. But while we willingly admit this, as well as the accuracy of his arrangement, we are disposed to say to him, though of course with much limitation, what he says to Dezeimeris, "that his arrangement is unnecessarily minute," &c. We do not often ask the scientific enquirer the sordid question *cui bono*? because good often comes from quarters, and through channels, where it is little expected. Still we fear that little benefit will come from the most elaborate and skilful discrimination of the exact tissue, or portion of tissue, implicated in extra-uterine gestation.

The section occupied with the causes need not detain us; because they are simply conjectural in the present state of our knowledge, and will most probably ever remain so; because such an inquiry can lead to no determinate benefit, and cannot even gratify a reasonable curiosity.

In the section containing an account of the symptoms there is much curious, and some instructive matter, on which, however, our limits forbid us to enter; but we would call particular attention to, and quote from, the section on diagnosis, containing as it does the more peculiar and striking symptoms of the affection. Before, however, giving an extract or two we beg the reader to notice the following, by way of preliminary caution. "A case occurred at Berlin in 1828, in which the section of the abdominal parietes was performed, upon the supposition of a tumor which was felt adjacent to them being an extra-uterine fœtus; instead of which, it proved to be an accumulation of fecal matter." From Siebold's Journal. This shews the importance of correct diagnosis, especially before we resort to such an operation as ripping up the belly, and may suggest to some the notion, which it will confirm to others, namely, that more than one of the many cases cited under the head of extra-uterine gestation, in this memoir, were abdominal tumors independent of fœtation.

"Although, as in other subjects pertaining to the department of midwifery, much difficulty will occasionally be experienced in establishing a diagnosis, yet assuredly in many instances which may be met with, I should unhesitatingly say, that when the patient is four or five months pregnant, the task is not unsurmountable; but at an earlier stage of gestation, although there may be some striking phenomena, yet we should not be justified in considering them infallible. The nature of the gestation is to be decided, certainly not by a reference to any single symptom, but by a strict analysis of all the most prominent features of any given case. If, after suppression of the catamenia and other phenomena of pregnancy for one or more periods, an individual were to be suddenly seized with uncontrollably acute pains in either iliac region, even antecedently to the period of quickening, accompanied by a well-defined swelling at a corresponding point, sanguineo-mucous discharges per vaginam; frequent desire for, and pain attending micturition, tenesmus, with a sense of fainting, such ailments ought certainly to warrant a practitioner in suspecting an ovarian or tubal pregnancy.*

* "Ce chirurgien célèbre dit avoir vu deux femmes enceintes de quatre mois,

Were the uterus found in an elevated position in the pelvis, and besides this organ, an additional body detected in the same cavity, such a discovery might certainly be viewed as a corroboration of our suspicions.

When, after the presence of foetal movement cannot be questioned, the cervix uteri is found directed towards the pubis, so much elevated in the brim, that it can be felt with difficulty, or that it cannot be reached at all, there need, generally speaking, be very little doubt as to the presence of an extra-uterine gestation. An additional support to this diagnostic is an undeveloped state of the cervix, and of the corpus uteri when it can be felt. Another point which deserves particular attention is, whether the abdominal tumefaction was observed to have commenced at one side, and whether foetal movement was remarked to have for a time occupied a corresponding point. When gestation is far advanced, and the adventitious cyst occupies a large share of the abdominal cavity, these diagnostics cannot be relied on, though of great value at an earlier stage. In connexion with the foregoing remarks, we must not overlook the importance of occasional paroxysms of acute pains, in different regions of the abdomen, as very characteristic of extra-uterine gestation. Of all the phenomena which may be particularized, none has commanded attention so frequently, as the altered position and undeveloped condition of the uterus, as may be observed in the histories of many of the cases which have been offered in illustration.

From the foregoing illustrations it may be observed, that in occasional instances extra-uterine gestation has been confounded with retroversion of the uterus; but a little reflection must satisfy the practitioner, that there is a marked difference betwixt the symptoms of each. In retroversion the patient is suddenly seized with almost total inability to void urine, and with tenesmus, but inability to evacuate the rectum, and these symptoms are invariably present; while in extra-uterine gestation, although there is frequent desire, and much pain in performing these functions, yet they are never obstructed, as in retroversion; and, moreover, these complaints supervene in paroxysms, or they are present only in occasional instances. In regard to the malposition of the uterus, the only symptom in which these derangements strikingly resemble each other, this likewise is but occasionally felt in extra-uterine gestation, while it always happens in retroversion. We have, moreover to remember, in reference to this last point, *first*, that the pelvic cavity, except in some very rare instances, is not at any time so completely occupied by the tumor of an extra-uterine gestation, as by the uterus in a state of retroversion; and, *secondly*, that the patient can freely evacuate the bladder, when the pelvic tumor is pushed towards the sacrum."

We omit what the Doctor has written in the three subsequent paragraphs on diagnosis, because we do not see their application to the subject in hand; because we do not intend here to enter on the *questio vexata* of the *viability* of children; and because we more than question the taste or utility of introducing the Rev. Dr.

chez lesquelles rien n'indiquait ce que leur état avait d'extraordinaire, si ce n'est des tiraillements fréquents dans l'abdomen et la tumefaction irrégulière du ventre qui se portait d'un côté seulement. Elles éprouvèrent les symptômes suivants lors de la rupture des trompes: elles furent attaquées inopinément de douleurs extrêmement vives qui durèrent deux ou trois heures; une douleur plus forte que les autres fut suivie d'un calme parfait; le ventre s'affaissa et fut comme aplati; une chaleur égale et douce se répandit dans la cavité abdominale; la peau se decolora, il survint des syncopes presque continuelles; le poulx s'affaiblit et se concentra; une sueur froide se répandit sur toute la surface du corps, et les malades expirèrent; Sebatier, Med. Operat. 1^{re} édition, t. i. p. 343."

Chalmers' and the Kinghorn cause into a memoir like this. What he says of ourselves we very freely forgive. We have lived too long amid the storms of the ocean to be much moved by the ripple of a river, or the heavings of a Sylvan lake. In the occasional conflicts in which we have been engaged, and which we could not always, however we might desire it, avoid, we have used the weapons in our hands as gently as was compatible with self-defence, and our championship, though self-constituted, of the truth. When in dealing with distinguished members of the profession, we have felt it our reluctant duty, it might be in error on our part, to find fault, we have done so in kindly feeling and courteous language, certainly with no desire to irritate or provoke; on the contrary, we would, if we could conscientiously, deal only in praise, and eschew altogether, in our intercourse with the genus irritabile vatum, the ungracious and unacceptable task of censuring; but in that case, criticism, whatever it be worth, would be at an end. Having skipped the three paragraphs in question, we give the following and concluding one, from the chapter on diagnosis.

"As we might be encouraged to have recourse to gastrotomy by the prospect of emancipating a living child, this essential point must be determined chiefly by the careful application of the stethoscope. The declarations of the parent, that she is conscious of foetal movement, cannot be relied on; since it must be well known to practitioners, that females often persist in stating that they have been sensible of the motions of the child to within a few hours, or indeed minutes, of its birth; while, from the degree of decomposition which it then exhibited, no doubt could be entertained that life must have become extinct several weeks previously. Violent foetal struggles, preceded or followed by rigors and expulsive efforts, and thereafter total cessation of motion, are proofs of the extinction of foetal life that will rarely deceive a practitioner. When these are followed by diminished tumidity of the abdomen, the secretion of milk in the mammæ, and the return of the catamenia, another conclusion may be drawn with equal certainty, viz. that the gestation is extra-uterine."

We can no further enter on the sections on prognosis, termination, and pathology, than to say, that they will well repay perusal, and shall conclude our notice of this very interesting publication, by glancing at the chapter on treatment.

This, our author considers under four heads:—*first*, the precautions required to retard or prevent laceration of the cyst; *secondly*, the measures necessary to moderate the hæmorrhage after laceration; *thirdly*, the management after the extinction of foetal life; *fourthly*, the steps to be pursued for the emancipation of the fœtus. On all these points the observations of Dr. Campbell are judicious, though unfortunately, from the nature of the subject, too little satisfactory in a curative view, to induce us to follow them.

PRACTICAL OBSERVATIONS ON ABORTION. By J. S. Streeter, Member of the Royal College of Surgeons, President of the Westminster Medical Society, Honorary Member of the Physical Society, Guy's Hospital, &c. With Plates and Wood-cuts. 8vo. pp. 70. London: Sherwood, Gilbert, and Piper, 1840.

MR. Streeter is a gentleman engaged in an extensive general practice, and it reflects no small degree of credit on him, that, harassed as he must be with calls upon his time and his attention, he should cultivate the science of his profession with such ardour and success. Those who enjoy the pleasure of his acquaintance can best speak to that enthusiasm which he displays, and which alone can conduct to anything great or honourable in medicine.

Mr. Streeter informs us that, being occupied with the study of the development of the nervous system, he was naturally led to examine such ova, passed by abortion, as came under his notice as an accoucheur. "I experienced," he says, "little difficulty in procuring fœtuses which had arrived at the middle periods, but observation soon convinced me that perfect and well-formed embryos were rarely expelled in miscarriage till after the third month had been completed; indeed, in most instances, before that time the ovum when passed entire was found on being opened to contain no fœtus, or one in a blighted or decayed condition; and I noticed that, where such ova were thrown off by abortion, my patients had resisted the usual means of prevention, that they often recovered rapidly, and showed little or no tendency to miscarriage in subsequent pregnancies." Many interesting cases of threatened or of actual miscarriage having occurred to Mr. Streeter, he was induced to review the whole subject, and ultimately to lay the result of his inquiries before the Westminster Medical Society, in the shape of a distinct essay. The present work is that essay in another form, and with some slight additions, and the main object of the author in addressing both the Society and the profession may be gleaned from the following passage.

"The practical points which I was anxious to enforce on the members of the Society were a more exact distinction between the premonitory and the essential symptoms of miscarriage, the impropriety of the use of opium, and the advantage of that of ergot during the presence of the latter, and the disadvantages of a casual or intentional rupture of the membranes during the process of abortion. Lastly, I wished to direct attention to the impossibility of laying down rules for the prevention of miscarriage in any subsequent pregnancy, without first determining, from accurate examination and competent knowledge of embryology, the normal or pathological conditions of the aborted ovum, and hereby arriving at the real cause of the miscarriage, instead of indolently and vaguely assigning it to the last accompanying circumstance."

The work consists of five chapters, the first devoted to some general observations—the second to the structure of the ovum—the third to the nature, symptoms, and causes of abortion—the fourth to the treatment of abortion—and the fifth to the prevention of abortion in any future pregnancy.

1. In his general observations, Mr. Streeter defines what he means by abortion or miscarriage (he employs the terms synonymously). He considers it, with Dr. Granville, as the premature extrusion of the ovum before its fœtus is capable of maintaining life, independent of the parent,—if it is so capable, it is premature labour and not abortion. He eloquently denounces the absurd distinction still preserved in our criminal code, between the procuring abortion *before* and *after* the period of quickening, and the staying of execution of pregnant criminals, only *after* that event has taken place.

2. The chapter on the structure of the ovum affords ample evidence of the industry, and of the judgment of our author. But it is not necessary for us to follow him in his embryological sketch.

3. Mr. Streeter remarks, that abortion may occur from the ovum not forming its normal attachment to the uterus after entering that organ in consequence of a defective formation of the decidual lining. More commonly, however, miscarriage does not occur until after the attachment of the ovum, when it usually consists :—

1st,—In the destruction of that membranous and vascular attachment which the ovum normally forms, by means of the uterine envelopes and the placenta, to the interior of the uterus.

2nd,—In the dilatation and opening of the neck and mouth of that organ, and,

Lastly,—In the extrusion of the unaffixed or detached ovum.

These stages, however, occur, in general, more or less simultaneously. Mr. Streeter goes on to observe that the exact nature of the "utero-ovine" attachment varies with the period of pregnancy. "At the commencement of gestation," he says, "when the connexion is entirely decidual, we might easily persuade ourselves that the union between the ovum and the uterus was weak, and that accidental shocks would more easily destroy it than after the formation of the placenta had occurred; but the contrary seems to be the fact. Perfectly normal ova are very rarely thrown out of the uterus by abortion, during the earlier weeks of utero-gestation; they are, in fact, seldom met with before the middle, and are most frequent of all in the latter months of gestation. This circumstance is of itself sufficient to show that the natural connexion between a healthy ovum and the uterus in the early stages of pregnancy is ample, and not easily broken; but the same experience also shows that, when the ovum is defective and the placenta not regularly formed, or becomes diseased, slight accidents may, and often do, lead to its complete separation and subsequent extrusion. When ova so thrown off are carefully opened, the fœtus will be found imperfectly evolved, withered, or entirely wanting."

The agents of separation of the "utero-ovine" attachment are, 1st, muscular contraction of the uterus; 2ndly, an increased arterial action, which leads to extravasation of blood between the ovum and uterus. The symptoms therefore which essentially attend the process of abortion are two, namely, uterine pains of two kinds,—the pains of dilatation and expulsion; and the more formidable one of hæmorrhage.

"Where the separation of the ovum results from vascular excitement of the uterus I believe a stage of premonition will have usually existed, too often indeed disregarded from the trivial inconvenience it occasions while present. It is marked, however, by sensations of weight, uneasiness and fullness about the pubic, inguinal, and lumbar regions; by the sympathetic pains in fact which accompany congestions of the pelvic viscera, and these are not unfrequently attended by white or coloured discharge from the vagina, and by irritation of the alvine or urinary organs. There is a teasing diarrhœa or frequent and unusually pressing calls to relieve the bladder—evidences of an increase of sensibility in these organs to their ordinary stimuli, and which increased sensibility is likely to extend to the uterus itself and set up expulsive action there.

Where the death of the embryo occurs in the early period of gestation, the essential symptoms of miscarriage are often preceded by a sudden and premature cessation of the customary morning sickness. In later periods a softness of the mammæ and a recession of the areolar changes when present, in many instances announce the approach of miscarriage. Where the placenta is withered as well as the fœtus, there is often superadded to these an offensive mucous discharge from the vagina for some time before the process of abortion actually begins. It is right, however, to state that the presence or absence of any of these symptoms cannot be looked upon as a certain diagnostic sign of the death or life of the fœtus; but collectively their presence amounts to a very strong presumption that the embryo has ceased to live, and that all attempts to prevent expulsion will prove unsuccessful, if not absolutely injurious, to the health and well-doing of the mother."

Mr. Streeter remarks, that the causes of abortion are all resolvable into three great classes:—

1st,—An imperfect or abnormal formation of the ovum. This may take place either in the fœtus or its membranes; or in the decidua and placenta, those structures which fasten the ovum to the uterus and finally connect the embryonic and the maternal systems.

2ndly,—Morbid states, functional or organic, of the uterus and its appendages.

3rdly,—Morbid states generally of the constitution of the mother.

He believes that imperfect or abnormal formation of some part of the ovum, or of its connecting media is by far the most frequent cause of early miscarriages. He illustrates this by two figures from preparations in his own collection. The death of the fœtus, however, he observes, does not by any means lead to the immediate expulsion of the ovum. The latter does not usually happen till certain changes have occurred in the structures of the utero-ovine attachment consequent on that event, in the uterine envelopes principally during the earlier, in the placenta more exclusively at the later, periods of gestation. The knowledge of this fact is most important, as it may, under certain circumstances, involve the reputation of the mother. It is also intimately connected with the pathology of those diseased ova which ordinarily receive the name of moles. In cases of twin conception, where the ova are not adherent, one fœtus may die early and be expelled prematurely, while the other may be carried to the full term and be born alive; but if the placentæ, as more commonly happens, are united together, the dead fœtus may lead to the premature expulsion of both, or it may be retained till the other is born alive.

Mr. Streeter does not venture on details of the pathological conditions of the ovum in general. But he makes a remark which we shall quote:—

"In examining aborted ova, it is not uncommon, on slitting up the chorion, to find two vesicles intimately connected and communicating, filled with fluid which in one instance remained transparent, in another threw down a large quantity of deposit when preserved in spirit. On mentioning this circumstance to Dr. Sharpey, he remarked, that it was not correct to assume that every vesicle found within a chorion was necessarily an amnion, for it might be a yolk vesicle. I am therefore led to regard the vesicle met with in one of the Velpeau's three early ova, in the one marked No. 2525.5, in Guy's Hospital Museum, and in several in that of University College, where there are vesicles contained within the chorion, not as instances of the presence of an amnion without a fœtus, but as degenerated yolk-sacks. In an ovum in the collection of Mr. Wells, where the vesicle is double and intercommunicating, and also in a similar one in the possession of Mr. J. Gregory Smith, I consider that the germinal membrane had commenced its evolution, that it had proceeded so far as to form its cephalic and caudal folds, and that both yolk-sac and embryo had undergone degeneration, and become mere vesicles."

He passes to those causes inducing abortion which occur from disease of the uterus or its appendages—and alludes to irritability of the muscular fibres of the uterus, however excited—apoplexies of the membranes or extravasations of blood between the uterus and ovum, and those effusions between the reflexa and chorion which gradually dissect up the reflexa from the chorion and form solid and tubercular-looking coagula—and those diseases of the interior of the uterus which lead to non-formation or imperfection of the uterine and ovine decidua, or after their formation to acute, subacute, or chronic inflammation of its lining membrane, especially of that part where the decidua serotina is evolved, and which participates in the formation of the placenta, the part which furnishes indeed what may be termed the uterine element of that organ. He conceives that we must turn for an intelligible explanation of hypertrophied or coriaceous states of the uterine membranes, for the origin of those pseudo-membranous formations external to the chorion which often cause so much perplexity in making out the real normal envelopes of the ovum, and for the production of those degenerated and solid ova which are termed moles. Lastly, we must refer to defective or morbid action of the same part for an explanation of those imperfections of the placenta which are so frequently found associated with fœtuses emaciated to the greatest possible extent.

In referring to the constitutional causes of abortion, Mr. Streeter says—"I believe that so long as the utero-ovine connexion remains healthy, and the excitability of the uterus is not exalted above its natural standard, that abortion

is not produced by constitutional disease, by organic disease of remote organs, or by general states of plethora or debility. Let me not, however, be misunderstood as underrating the influence of constitutional disturbance in increasing the nervous susceptibility, or in exciting latent predisposition to disease in the uterine as well as in other organs. All that I mean to assert is, that general causes exercise no more immediate or specific influence over the uterus than over other important organs, as for instance over the heart, the stomach, and the brain. Some of the diseases enumerated, the exanthemata, for instance, may extend to the fœtus and destroy it, and so cause abortion, but unless they first produce its death, abortion does not as a general rule ensue."

4. The subject of *Treatment* occupies the fourth chapter.

Mr. Streeter doubts the propriety of employing opium in the earlier weeks and months of pregnancy—he seldom has recourse to it where abortion is threatened before the third month of pregnancy is completed.

"When however in addition to uterine pain these early cases are attended with any hæmorrhage, I lay it down as a canon of treatment that the practitioner ought not to employ opium, or any drug that has the property of suspending or lessening uterine contraction. The results of enquiries show that miscarriage in almost all instances arises from causes over which, when its *essential symptoms* have set in, the accoucheur has lost all control. Fœtal or uterine disease or imperfection has accomplished its work of destruction, and the blighted embryonic thing must now be cast out from the womb. If the ovum is not so blighted, rest in the recumbent or horizontal position, mental quietude, the abstaining from stimulating articles of food, the clearing out of the bowels by a simple enema or mild purgative, the administration of common salines, such as the citrate of potass with small doses of digitalis and hyoscyamus, will suffice to allay the symptoms. When however the ovum is blighted, it must necessarily be thrown off by miscarriage, and the suspending the uterine pains by the administration of opium only retards, and in too many instances disarranges, that process altogether. If therefore hæmorrhage continues or recurs after a few hours' trial of the above means, it seems to me that it then becomes a duty to ascertain by vaginal examination whether the os uteri has begun to dilate or not. If dilatation of this part has commenced, or if the hæmorrhage steadily increases, even before it becomes profuse or tells upon the constitution, the ergot of rye should be freely and fearlessly employed in larger or smaller doses, and given at longer or shorter intervals according to the effects which it produces. The accoucheur should from time to time as gently as possible ascertain the extent of dilatation of the os uteri, remove all clots from the vagina, and dislodge the ovum if, as sometimes happens, it is merely adhering to the os uteri and keeping up hæmorrhage by the irritation which it occasions there."

Keeping the room of a moderate temperature—the horizontal posture—cold drinks—light food—stimuli if syncope impends—and, should the symptoms become alarming, pressure on the abdominal aorta and plugging of the vagina. Permanent contraction of the uterus can often be brought on and may nearly always be sustained by regularly-repeated doses of the ergot of rye, and the use of cold and astringent injections into the rectum. When all other means fail, the sole remaining resource is transfusion.

Should the membranes rupture when the cervix is only partially opened, or before the separation of the ovum from the fundus and body of the uterus is complete, the liquor amnii is expelled, and if small the fœtus also, and the partially separated membranes and placenta alone remain. If the separation from the fundus is complete, the membranes are often partially or wholly everted, and may be felt hanging out from and fringing the os uteri. The process of extrusion is now long retarded, and effected at last by a process resembling

putrefaction. If hæmorrhage continues, and the vagina is lax, and the cervix uteri sufficiently dilated, the introduction of a finger a little way into the uterus will often enable the practitioner to dislodge the ruptured ovum, but if this cannot be done by gentle means, the use of the plug is the preferable proceeding. After the fifth month, the manual interference employed for hæmorrhage at the full term may often be resorted to with advantage.

Frequently, after the rupture of the membranes the hæmorrhage ceases altogether, or becomes so trifling as not to influence the constitution, and the pains subside or entirely disappear. The most advisable practice when this happens, is to try and reach the inverted membranes, and to gently dislodge them with the finger; but if they tear, or the attempt at removal produces much pain, it is proper to desist; as long as there is no hæmorrhage it is better to wait, to watch the patient carefully, and just before or as soon as putrefaction sets in, to frequently wash out the vagina and uterus with injections of tepid water. The patient is, at the same time, to be supported, and Mr. S. has never known mischief happen.

It has been recommended in these cases to hook out the placenta and the membranes with a small wire crotchet, or to seize the protruding parts with a pair of polypus forceps, and so extract them; but Mr. Streeter would prefer employing the continued injection of a stream of tepid water by Read's syringe.

5. The prevention of abortion in any future pregnancy occupies the last chapter of the work. Mr. Streeter holds it to be absolutely essential, that the ovum which has been expelled, whether it has come away entire or in fragments, should along with its envelopes be submitted to a minute and careful examination. This is most conveniently done after the ovum has been suspended for a few hours in a large vessel of water, so as to allow the colouring matter of the blood to disengage itself and subside to the bottom; and indeed the whole examination is most distinctly and satisfactorily conducted under water. This examination seldom fails to elicit, whether the ovum has perished from inherent imperfection, or from the fault of the uterine envelopes, or placenta. A most important practical distinction.

"When examination shows, as it commonly will during the first three months of gestation, that abortion has arisen from inherent imperfection in the ovum uncomplicated with uterine disease or hæmorrhage, the after-treatment required is of the most simple description: the lochial discharge in general quickly subsides, the catamenial secretion is re-established in due time, and impregnation usually takes place again at no very distant period. According to my experience females seldom have a long succession of imperfect ova without an intermixture of perfect ones, and unless the uterus is itself in fault, the perfect ova are retained till the full term of gestation is accomplished."

In such a case, the female is to be managed in a future pregnancy, just as if she had never miscarried.

But when there are effusions of blood or traces of inflammatory disease in those membranes which are derived from the uterus or in the placenta, the patient must at once be placed under appropriate treatment. Bland injections should be thrown into the vagina, and such constitutional management entered on as seems adapted to the case. The morbid state of the interior of the uterus is however seldom completely removed without the strictest attention to diet, change of air, and a long and uninterrupted cessation of cohabitation.

When such a female again becomes pregnant, the utmost care is requisite. She must submit to an antiphlogistic regimen, the bowels must be carefully regulated, and bleeding followed by an opiate should be occasionally employed as a measure of precaution, and especially whenever symptoms of general or uterine plethora show themselves. Bodily quietude should be preserved, but not carried so far as to bring on mental or constitutional irritability. Gentle

exercise—the recumbent posture, however, about the expected period of miscarriage—attention to the pelvic viscera—abstinence from cohabitation.

“ Examination in some few instances shows no appreciable disease or imperfection of the ovum or its membranes, and then the miscarriage must be assigned to a morbid excitability of the uterus. Morbid irritability of the uterus is, I believe, seldom the sole or immediate cause of abortion till the utero-ovine connexion has become almost wholly placental, and this is not the case till after the fifth month of gestation has commenced. It is indeed the most frequent cause of labour coming on prematurely after women have experienced accidents, or sudden and severe mental emotion; but its presence in the earlier months predisposes more to irregular determination and congestion of blood, and consequent effusion on the membranes, than to any irregular and expulsive action of the muscular fibres of the uterus.”

These cases are troublesome, miscarriage often occurring in a series of successive pregnancies, till the tone of the uterine fibres has been lowered by distention, and their susceptibility to contraction has been thereby lessened. Change of air—tepid or cold sea-water baths—suitable tonics, &c. are requisite. If pregnancy takes place before the susceptible state of uterus is removed, the chief, if not the only means upon which reliance can be placed for preventing a premature expulsion of the fœtus, will be the timely and persevering use of opium, exhibited in the form that agrees best.

Some other mixed cases not unfrequently present themselves in practice. An inherently defective ovum, for instance, is found accompanied with either an irritable or an inflammatory condition of the uterus; or again, an inflammatory state of the uterus may coexist with an irritable one. Such mixed cases demand mixed treatment. This should partake more largely of the character of that which is in use for subduing inflammation on the one hand, or for allaying irritability on the other, according as the symptoms and appearances of the aborted ovum proclaim the one or the other state of the uterine system to predominate. Early and moderate bleedings, alternated with opium, abstinence from cohabitation, attention to the health, &c. must be had recourse to.

Mr. Streeter concludes by observing that, “the practical value which I have attached to the information derived from the examination of aborted ova may by many practitioners be thought over-rated. They have perhaps regarded the pathology of the ovum as a subject altogether more curious than useful, but when they have adopted the indications which it affords, they will soon recognize its worth in practice.”

We think he deserves much credit for the manner in which he has carried out this sound pathological view.

THE EYE: A TREATISE ON THE ART OF PRESERVING THIS ORGAN IN A HEALTHY CONDITION, AND OF IMPROVING THE SIGHT; TO WHICH IS PREFIXED A VIEW OF THE ANATOMY AND PHYSIOLOGY OF THE EYE; WITH OBSERVATIONS ON ITS EXPRESSION AS INDICATIVE OF THE CHARACTER AND EMOTIONS ON THE MIND. By *J. Ch. August. Franz*, M.D. &c. &c. London: J. Churchill. 1839.

Dr. Franz informs us, in a short Preface, that his chief object has been to point out the principles by which the organ of sight is preserved in a sound and healthy condition. He has, accordingly commenced with the age of childhood, and, proceeding through the successive periods of life, he has considered, the circumstances peculiar to each period, and called attention to whatever is calculated to prove either beneficial or injurious to the eye. Dr. Franz apologises for writing in a

tongue which is not his native one; but such excuses are unnecessary, for Dr. Franz writes well.

The work consists of two Parts. The *first* embraces the anatomy and physiology of the eye—the importance and dignity of this organ—and its expression as indicative of character. The fourth chapter, that on the expression of the eye as indicative of character, is very elaborately worked, and might form a pendant to Lavater. The enumeration of its contents will give our readers a notion of the pains expended on it—pains characteristic of the laborious nation of the author.

It comprises—observations on the look and its principal differences. Under the head of expression of the eye with reference to the quality and condition of the mind, we have, indication of the innate constitution of the mind—the eye of the man of powerful understanding—the eye of the man of impassioned feeling—the eye of the man of energetic volition—the eye of the man of talent, and creative genius—the eye of the man of limited capacity—indication of the habitual disposition of the mind—the moral condition—the eye in virtue and piety—the eye in innocence—the immoral condition—the eye in immorality—the eye in vice—indication of the emotions of the mind—affections—the eye in love—the eye in unsuccessful love—the eye in hatred—the eye in joy—the eye in sorrow—the eye in hope—the eye in despair—the eye in fear—passions—the eye in terror and horror—the eye in anger and revenge—the eye in envy and jealousy. Then come sections on the expression of the eye at the different periods of life—expression of the eye as influenced by difference of sex—expression of the eye in reference to the moral and intellectual condition of nations, and lastly, practical observations on the expression of the eye, especially of the look. Study of the look important to metaphysicians and moralists—study of the look important to members of the legal profession.

We have glanced over these descriptions of the various expressions of the eye, and we must confess that they are rather beyond us. Not that we mean to refuse to the eye the power of expression in a high degree—it is the diagnosis that staggers us.

There is a passage, by the way, that may give some hints to the New Police, in these murderous days, and, if duly studied by the Inspectors, may help them to retrieve their character.

“Lastly,” says Dr. Franz, “the study and knowledge of the indicative character of the eye is of the highest importance in the inquests and post-mortem examinations held on the bodies of persons who have been murdered,—if the person who has committed the crime, or who has been concerned in it, is present in the house or apartment where the examination is carried on.

If in such cases an individual is observed to look round in an anxious, uneasy, and confused manner, at one moment with a sad and dejected air, and at another with affected unconcern, or forced cheerfulness; if there is an unusual bustling activity and restlessness in his manner; it may in general be fairly suspected that he is either the actual perpetrator of the deed, or has been at least an accessory, and is consequently arraigned at the bar of conscience. The eyes here always give the first intimations of guilt. The psychologist must certainly observe with especial care and attention the eyes, as well as the countenance and behaviour of this person, and before he forms a determined opinion, he should endeavour to ascertain by close inquiry the following particulars:—

1. What is the character of the person in question, both as to his moral conduct, general habits, and mode of life?
2. What is his habitual state of feeling; whether it was previously different from that which he evinced during the inquest and examination?
3. Whether he has on all occasions manifested a great degree of horror at the sight of a dead body?

4. What is his general demeanour; and whether it is reserved, anxious, and timid in the presence of strangers, and especially of officers of justice?

5. Whether he has been nearly and intimately connected, either by the ties of kindred, or in any other way, with the unhappy person whose death has been the subject of investigation?"

Thieves and murderers are so hardened in this country, that we fear they will laugh at this physiological cross-examination, and be too apt to consider it "all my eye."

The *Second Part* is devoted to the Art of Preserving the Eye in a Healthy Condition, and of Improving the Sight: Management of Ophthalmic Diseases in their Incipient Stage. It consists of six Chapters—the first, on the Eye in Infancy—the second, the Eye in Childhood—the third, the Eye in Youth—the fourth, the Eye in Manhood—the fifth, the Eye in Old Age—the sixth, General Regimen with reference to the Eye.

In the Chapter on the Eye in Youth, Dr. Franz protests, for the eye's sake, and on its account, against tight-lacing, stiff cravats, and tobacco.

With reference to the two first, he observes that, such imprudent confinement of the neck, or of the body generally, may give occasion for the development of dangerous inflammation of the eyes, myopy, or actual weakness of sight; or may even lay the foundation, though the progress may be slow, and the disease may not manifest itself for years, of cataract, or of amaurosis. So that not only crooked spines, bad lungs, and bad livers, but bad eyes, *flow* from tight-lacing.

We all of us would wish to keep our eyes and our eyesight as long as possible, and we must do Dr. Franz the justice to say that he has tried his best to preserve them for us. At every age, from babyhood to the "last sad stage of all," we have minute instructions for the preservation of these valuable organs.

As all medical men are consulted, at times, on the use and the selection of glasses, we are tempted to glance at Dr. Franz's directions for their use. He observes:—

The ordinary glasses are made of plate glass, which is not always sufficiently hard, and often not pure enough; but the glasses which are made of Brazil pebbles deserve the preference. When the pebble is properly cut, and the glasses are finished with care, and are well suited to the condition of the eyes, they have a beneficial influence upon the organ of sight. They are, it is true, very expensive, but are at the same time very durable, and persons who can afford to pay for them ought not to grudge their higher price. The glass is usually colourless, sometimes coloured. Whatever material employed, the principal requisite in all cases is, that it should be as hard as possible, perfectly free from spots, striæ, air-bubbles, &c. and without mixture of colours; and in the next place, that the greatest accuracy and care should be observed in grinding and polishing the glasses. The grinding is performed upon moulds or cups, which constitute a segment of a sphere, and thus give the form to the surface of the glasses. Convex glasses are named according to their focal length, and the concave are numbered in indication of their degree of concavity. No 1, for instance, on a concave glass, marks the smallest degree of concavity; No. 2, a somewhat higher, and so forth.*

Glasses may be plane and non-refracting, or bi-convex, or bi-concave, or plano-convex, or plano-concave.

* The numbering of glasses is unfortunately not everywhere according to the same standard. The glass which with one optician is No. 1, is by another marked No. 2. If, therefore, a person has broken or lost the glass which he had in use, say No. 2, for instance, he must not ask for and purchase at random another No. 2, but must first by carefully trying it ascertain whether the new one be suitable.

"In using the glasses hitherto described, it is necessary to bring the head into the direction of the object which we wish to view. To remedy this inconvenience glasses have been invented, in the employment of which it is only required to turn the eyes towards the object, without turning the head at the same time; these are:

The *periscopic glasses*, as they are termed, the outer surface of which, or that which is turned away from the eye, is convex and the inner concave; they are particularly recommended by Dr. Wollaston.

There are also glasses with cylindrical surfaces. Independently however, of the circumstance, that glasses of this, as well as of the preceding description, being difficult to make, are seldom quite perfect, they have among other disadvantages this in particular, that objects are seen somewhat altered from their true form, and are less distinctly recognised than with the other kinds of glasses. Neither of these kinds therefore is to be preferred to those previously mentioned.

Every glass, of whatever form its surface may be, ought to be large enough to cover the eye perfectly. The oval form is better adapted for spectacles, the round for hand-glasses."

The frame, or mounting of glasses, he continues, is not immaterial. In order to avoid false light, it must be dark, and not polished; it should be easy, and somewhat flexible, that it may not become incommodious when used for a long time. The most suitable material for the frame is either unpolished blue steel, horn, or tortoise-shell. The old shape, in which the spectacles were pressed and held fast upon the nose by means of a narrow arch, was objectionable. The kind now in common use is far better; these are fastened on the head by means of two long jointed sides. In this manner the glasses are kept in a fixed position before the eyes, and if the bridge over the nose be curved at one side only, the same glass must always be applied to the same eye, as they cannot then be used inverted; this is of importance when there is a difference in the sight of the two eyes. The frame of spectacles must be so contrived, or the spectacles at least fixed before the eyes in such a manner, that the axis of the eye may coincide with that of the glass. To see remote objects therefore the glasses must stand more perpendicularly before the eyes, and to see near objects they must be inclined somewhat forwards. The glasses moreover ought not to lie in the same plane; their position should observe the direction of an obtuse angle of such degree that the axes of the eyes, which of course converge more in reading and writing than in viewing distant objects, may exactly coincide with the axes of the glasses. If these rules are neglected, the spectacles do not represent objects clearly and distinctly; they occasion an unpleasant sensation in the eyes, and even giddiness and head-ache; and contribute likewise to produce the squinting and fixed look which is frequently observed when the spectacles are taken off.

Dr. Franz inquires, when eye-glasses should be first employed, how chosen, and in what manner used. He properly reprobates the use of an eye-glass for fashion's sake; it is ridiculous. He thinks that the frequent use of concave glasses by young people is not always the consequence of myopy, but more often the cause of this defect of vision. Persons who do not think their sight good enough for very distant objects, should by no means have immediate recourse to eye-glasses, as myopy is frequently induced by this practice.

In the first degree of myopy, when, for instance, an ordinary-sized type can be read at the distance of ten inches, weak plano-concave glasses in the form of double hand-glasses, better however in that of spectacles, may be used, but for viewing distant objects only. A single glass is objectionable. In a moderate degree of myopy, the exertion of the eyes, and even of the body, may be much relieved during such occupations with near objects as require an extensive field of view, by very weak concave spectacles. For distant objects they must be stronger. When the degree of myopy is such, that even large objects at several

paces distance cannot be recognised without difficulty, and the eyelids are much drawn together in looking at them; when small objects, or the book, in reading, must be brought very near to the eye, perhaps as near as three or four inches; when, consequently, use is made only of one eye to view the object, because on account of its proximity the axes of vision can scarcely be united upon it: spectacles are in such cases indispensable. One of the principal rules, however, to be observed in all cases of myopy is, to have recourse to eye-glasses rather somewhat *late* than too early.

"With respect to the selection of glasses, let the choice never fall upon a single concave glass, and let it be rather upon a pair of spectacles than double hand-glasses; because glasses in the form of spectacles remain at rest and in a proper position before the eyes. Let the lowest possible number that will answer the desired purpose be chosen. If the glasses enable the individual to see distant objects clearly, or if they relieve the exertion of the eyes when employed upon near objects, they are suitable, and he ought to be satisfied with them. If he choose a higher number, he will certainly have the advantage of seeing distant objects more distinctly, but the sight is equally tried whether glasses that are too strong, or no glasses at all are made use of; in either case the myopy increases. The person desiring the aid of spectacles will always do well to apply to an experienced and intelligent optician, and to communicate the four following particulars.

1. What degree of myopy exists, that is to say, at what distance he can still see clearly; and whether it is the same in each eye. Both eyes must accordingly be tried beforehand, in the manner explained at p. 170, first together, and then each eye separately; for the latter purpose one eye should be covered, while the experiment is made with the other.

2. At what distance he wishes to be enabled to see clearly. For reading or writing, twelve to fifteen inches may be assumed as a proper distance.

3. Whether the spectacles are required only for some particular occupation, and if so, of what nature the occupation is, or whether they are intended to be worn constantly.

4. Whether he intends to use the spectacles chiefly in the day-time, or in artificial light."

Spectacles should be tried for some time before they are finally selected. They should be used as moderately as possible, and the myopy not unfrequently disappears.

"After having used the glasses first chosen for some years, if the individual is not so perfectly satisfied with them as at first, the myopy has either increased or diminished. It is accordingly very injudicious to procure without farther consideration glasses of higher power, as is unfortunately the usual practice in such cases. The near-sighted person should first endeavour to ascertain the present condition of his eyes by trials of the sight with the naked eye. If by comparing the result of the present trial with that which was obtained on first having recourse to glasses, he find that the myopy has diminished, the glasses hitherto used are either to be exchanged for weaker, or to be entirely laid aside. But if he find that it has increased, it is more advisable to retain still the same glasses, and to exercise his eyes in looking at distant objects, observing at the same time the general rules before-mentioned, than to exchange them for stronger. Glasses of higher power may however be necessary, if the myopy, owing to any unavoidable injury, has so much increased, that the occupation causes exertion and fatigue to the eyes, even when proper glasses have been selected in the first instance. But it is always better to refrain as much as possible from the exchange of glasses; for persons, who without consideration are continually having recourse to glasses of stronger and stronger power, run the hazard of being at last unable to procure any glasses which can afford them satisfaction, and consequently of becoming, as it were, entirely blind. Glasses which are employed

chiefly for particular occupations with near and fine objects, ought not to be used for distant objects. In a very high degree of myopia, it is well to possess one pair of spectacles for remote, and another for near objects, and even a third for occupations in the evening."

Far sighted persons should seek the aid of glasses too early rather than too late, a rule the reverse of that which applies to the near-sighted. They too should use spectacles, begin with a weak power, and institute a careful trial previously to choosing. With the advance of age stronger glasses are necessary, but they should be charily adopted.

We must here conclude our notice of this little work, which we recommend to the public, perhaps to the profession, as well calculated, if its precepts are acted on, to preserve the eyes of its readers. Of Dr. Franz we entertain a high opinion, and he may be assured that his English brethren welcome his appearance amongst them as an author, as well as a physician.

THE INTIMATE STRUCTURE OF SECRETING GLANDS. By John Müller, M.D., Professor of Anatomy and Physiology in the University of Berlin. With the subsequent Discoveries of other Authors. By Samuel Solly, F.R.S., Lecturer on Physiology, and on Comparative Anatomy, at St. Thomas's Hospital, &c. London: Joseph Butler. 1840.

Mr. Solly is very favourably known to the profession as a human and comparative anatomist. His present translation of Müller's work on the glands will not derogate from the good opinions which his previous productions have won for him. In the Introduction, in which Mr. Solly speaks of the work he now presents in an English garb, he observes:—

"The information which it contains, and the fundamental doctrines established by the researches which it records, cannot be too highly appreciated; and though no doubt all teachers of physiology are familiar with them, and yearly communicate them to their pupils, yet it is hardly to be expected that the great body of medical practitioners should have had the opportunity of referring to this most important volume. I hope, therefore, to present an acceptable offering to the profession, by giving an abstract of its contents. A complete translation of the whole work would not, I imagine, prove so generally useful to my professional brethren, as a faithful analysis, and I have endeavoured to add the most important observations which have appeared on this subject since its publication in 1830."

Independently of some prefatory observations, the work consists of fifteen books and an appendix. The *first* book is on the structure and development of the simple cutaneous follicles—the *second*, on the minute structure of the intestinal glands—the *third*, on the structure of peculiar excreting glands in certain animals—the *fourth*, on the structure of the glands which are appended to the organs of generation—the *fifth*, on the minute structure of the mammae—the *sixth*, on the structure of the glands subsidiary to the organs of sense—the *seventh*, on the intimate structure of the salivary glands—the *eighth*, on the intimate structure of the pancreas—the *ninth*, on the intimate structure of the liver—the *tenth*, on the intimate structure of the kidneys—the *eleventh*, on the intimate structure of the testicle—the *twelfth*, summary of anatomical observations on the intimate structure of glands—the *thirteenth*, a natural order of glands, arranged according to their anatomical characters—the *fourteenth*, corollaries on the evolution and first formation of glands in the embryo—the *fifteenth*, physiological corollaries on secretion, particularly of glands.

The Appendix is made up of—Owen on the termination of the urinary ducts—Dr. Sprott Boyd on the mucous membrane of the stomach—Dr. Davy on the male organs of some of the cartilaginous fishes—Dr. Bischoff on the mucous membrane of the stomach—Purkinje on the same.

As the subject is too exclusively anatomical to permit us to venture on an analytical account of the work, we shall merely select those portions which will put our readers in possession of the more modern discoveries or opinions of moment to them as practitioners.

We shall take the thirteenth book which follows out the development of glands from the most simple to the most elaborate, as a key to the existing ideas on their nature.

A NATURAL ORDER OF GLANDS, ARRANGED ACCORDING TO THEIR ANATOMICAL CHARACTERS.

I. GLANDS OF THE FIRST AND MOST SIMPLE ORDER.

"There are four elementary forms of the most simple gland; the cellular, the follicular, the cœcal intestinule, and blind vessels or tubuli.

1. *Crypts or cellules.*

These are pits slightly scooped out of the secreting membranes."

2. *Follicular or pedunculated vesicles.*

3. *Elongated utriculi*, or cœcal intestinules.

Here the eversion of the simple membrane is greater, but without any neck or swelling.

4. *Tubuli*, or blind vessels.

This division consists of very long prolongations, or tubuliform pouches, straight or bent, with cœcal apices. These tubes or blind vessels are sometimes twisted into clusters and convolutions, even sometimes spirally, as in the testicles of many insects. They are either simple, or united by different orifices.

1. *Cryptæ Compositæ*, or compound cellules; many crypts united in receptacles, or sacs.

2. *Folliculi Compositi*, or compound pedunculated vesicles.

3. *Intestinula Cæca Composita*.

4. *Tubuli*, or compound cœcal vessels.

III. GLANDS OF THE THIRD ORDER.

Cells, Follicles, Intestinules, and compound Tubes united in a glandular bag.

IV. GLANDS OF THE FOURTH ORDER.

Glands composed of cellular tissue.

1. Glands composed of the spongy cellular tissue, with central cells, leading to excretory ducts, but without any compound division into lobules.

2. Glands composed of spongy cellular tissue, with septa placed between the segments of the glands.

3. Glands composed of spongy cellular tissue, separated externally into lobes, with excretory ducts.

4. Glands composed of spongy cellular tissue, divided into lobes, the cells leading to the central cavities, without any proper excretory ducts.

5. A spongy web of cells in the parallel tubes of the gland.

V. GLANDS OF THE FIFTH ORDER.

Lobulated Glands, composed of twig-like cœcal intestinules.

1. A gland formed by twig-like cœcal intestinules, bound up together as fasciculi in the lobules.

2. A gland formed of ramose intestinules, arranged in a foliated manner in the lobules.

3. A gland formed by twig-like cœcal intestinules, irregularly placed.

VI. GLANDS OF THE SIXTH ORDER.

Ramose branch-like excretory ducts, surrounded from beginning to end by elementary particles.

This efflorescence is not merely terminal, but it accompanies the branches

throughout, even to the most minute twigs, such as botanists call protracted efflorescence.

VII. GLANDS OF THE SEVENTH ORDER.

A complicated ramification in a lobulated gland, with trunks continuous and entire between the lateral branches of the excretory ducts, and the ultimate terminations of which are vesicular.

"An entire and continuous trunk of the excretory duct, which does not terminate in ramifications, but sends off smaller branches laterally, which pursue their course continuously, through its own lateral ramification, from which lobules of different degrees of size arise. For each trunk connects the larger lobes with the lateral ramifications, and the branches form with the twigs lobules of a second order. Finally, the most minute lobules are formed out of the ultimate particles which grow upon the smallest offsets of the twigs. The origin of these lobules is explained by embryology.

To this class belong the salivary glands, the pancreas, the mammæ and lacrymal glands of many mammalia."

VIII. GLANDS OF THE EIGHTH ORDER.

A compound ramification in non-lobulated glands, the trunks dividing into irregular branches, with cæcal, twig-like, or vesicular terminations.

"In this order the trunk continues through the lateral branches; it is soon lost in its own ramifications, gradually terminating in the most minute twigs. But if the whole organ be very much evolved, the whole organ puts on externally the appearance of a species of parenchyma, as in the liver of some of the higher animals, in which the liver consists of a system of small and large lobules, but offers only segments and incisions, 'Segmenta et incisiones.'"

IX. GLANDS OF THE NINTH ORDER.

Formed by Tubes and Vessels, and not of ramose Cæca.

"The elements of these glands are very long tubes, of an equal diameter from their origin to their termination, either straight or winding, sometimes bifurcated from the beginning, and becoming simple after giving off their branches."

Of these M. Müller describes six forms, but we need not particularize them.

The *Twelfth Book* presents us with a very brief

SUMMARY OF ANATOMICAL OBSERVATIONS ON THE INTIMATE STRUCTURE OF GLANDS.

The facts, says the translator, which have been brought forward demonstrate, that:—

"However much secreting organs may differ in their conformation, they exhibit a continuous series through the animal kingdom from a simple follicle, without ramifications, up to the most complicated structure; consequently that there is no distinction between the secreting organs of the invertebrata and those of the highest animals; simple tubular-shaped follicles and convoluted cæcal ducts pass by a continuous chain through the different series of animals into conglomerate glands.

Secondly, that this boundless variety in form has simply relation to an increase of secreting surface, within a circumscribed space.

Thirdly, that the sanguiferous system which conveys the materials for secretion, is nowhere continuous with the ducts which contain that secretion, and that their connexion is solely that of the *surface* of one set of vessels with the *surface* of the other, the secretions being eliminated through the coats of the vessels, similar to the process of secretion which is constantly going on in the air-cells of the lungs.

Fourthly, that the vascular network which surrounds the secreting ducts, whatever may be their form, is composed of blood-vessels infinitely more minute than the ducts themselves.

Fifthly, that the evolution of glands is similar in all classes of animals, and that the most complicated glands of the highest animals, originate in the embryonic stage from a single tube, like the simple secreting organs of the lowest.

Sixthly, that there is no correspondence between the form of the secreting surface and its product, as the existence of the same form in the kidneys of one animal, and the testicles of another, unequivocally demonstrates.

Seventhly, that as numerous nerves may be traced accompanying the renal arteries in the horse, and ramifying upon their surface, in the substance of the kidney, it is most probable that nerves form an important part in the structure of all glands.

The *Fifteenth Book* is made up of:—

PHYSIOLOGICAL COROLLARIES ON SECRETION, PARTICULARLY OF GLANDS.

The nature of Secretion has always puzzled physiologists, and it is left as much in the dark by Müller as he found it. But there are some phenomena on which observation throws light, and which it is right to be acquainted with.

"The only rational explanation," says Müller, "of secretion is, to consider it as a metamorphosis of the animal matter, which the blood undergoes in various ways, while circulating through the organs." The arteries terminating only in the veins the vascular circle is, *pro tanto*, closed, yet it appears that a proper membrane to the minutest vessels is not always to be found, and that observation teaches that new currents of blood spring up in the substance of organs, both in the embryo and the adult; in consequence of which arrangement, "the substance of any organ itself imbibes the blood, and assimilating its particles, changes them to its own peculiar substance."

"This metamorphosis, into substance, is threefold:—1. Blood is changed into the substance of different organs in *nutrition*; 2. Blood is changed into a more fluid substance, which, passing through the walls of an organ, is denominated *secretion*; 3. Blood is changed into substance, and having passed through the walls of organs, is immediately indurated."

"This last manner of secretion does not differ much from the true and genuine secretion. For these hard particles thus deposited in the walls of an organ were fluid in the first instance, and it is in this way that the hair, feathers, shells, scales, and nails are produced."

All secretion takes place on a *surface*, whether it be that of an expanded membrane, or the more complex one of a gland. No open pores are necessary or discoverable.

"It is not the blood-vessels which secrete, but the surface of the membranes in which, as in all organs, the smallest blood-vessels produce the vascular rete or rete of currents."

"These surfaces of secreting organs receive the circulating blood through the reticulated vessels, they imbibe it, are nourished by it, but they do not secrete the altered fluid particles in a liquid state from the blood-vessels, but from their own peculiar substance, which then flows out upon the membranes themselves, or in the appropriate ducts." "No one," continues our author, "among the learned, contends that the mucus in the mucous membranes is separated by the blood-vessels: truly it is the mucous membrane itself, imbued with the circulating blood, that takes up and changes the contained fluids, and melts outwardly into a diffuent mucus."

As secretion is *not* limited to the *extremities* of excretory ducts, not even a gland is necessary for secretion. Expanded membranes, glands, foliated processes, are only so many means of giving secretion effect.

Spirit of the Foreign Periodicals.

M. LISFRANC ON THE NECESSARY ALLIANCE BETWEEN MEDICINE AND SURGERY.

"Or late years these two divisions of the healing art have contracted an indissoluble alliance. It is impossible to be a truly good surgeon without being a good physician also; or to be a good physician without having practical knowledge of surgical maladies. Who would think in the present day of amputating a limb, without having previously examined, with most minute care, the state of all the visceral organs? There may be a tubercular state of the lungs, or a latent inflammation of the intestinal tube, which needs only the general reaction, which necessarily follows every great operation, to explode with violence. How then can you guard against such mischief, unless you possess the knowledge requisite to detect the existence of these morbid states? The neglect of ascertaining the state of the inward organs, before having recourse to the use of the knife, has been the main cause of operative surgery having so often fallen into bad repute. Again, in severe injuries of the head the chief danger, it is well known, arises from sympathetic disease induced in the brain or its membranes."

The following censure is liberal on the part of a Frenchman, as it exposes—we need not say, very deservedly and truly—the prevailing errors of his fellow-countrymen.

... "A most pernicious heresy has sprung up among medical men of late years;—to wit, that 'the nature of a disease being known, its treatment is so likewise.' As if it was sufficient to know the mere name of any weapon to be able to use it aright. This error has arisen chiefly from the unwise attempt to reduce under general rules numerous morbid individualities, each of which constitutes, so to speak, a separate exception. Thus, it has no doubt been the cause of those absurd systems of *exclusivism* in medical practice which have been so frequently brought forward—one set of men lauding on all occasions the use of the lancet, another the use of purgatives, a third of the chlorurets, and a fourth of tonics, in the treatment of one and the same disease. The history of medicine exhibits, it must be confessed, anything but a creditable picture of the professional sagacity, or even of the common sense, of its professors. One quarter of a century has very often been almost solely occupied in overthrowing what its predecessor had been engaged in building up; and such will ever continue to be the fate of physic, until medical men are properly impressed with the truth, that every case of a disease presents some individual difference or peculiarity—arising from a multitude of causes, such as constitution, the state of the weather, the condition of the mind and feelings, &c. &c.

"I conjure you," adds M. *Lisfranc*, "to avoid being misled by opposite doctrines; such as you will hear professed elsewhere."

(This is a hit, we suppose, at M. *Bouillaud* and other followers of the *Broussais* regime, as well as at several other of the academicians who have been of late discussing the utility of purgatives in typhus.)

Absurd Practice in some of the Paris Hospitals.

M. *Lisfranc*, still commenting on the dangerous errors of *exclusivism* in medicine and on the extravagancies of certain modern reformers, continues.

"Just look at the practice of some of these gentlemen in their hospitals! See them ordering the same dose of a medicine to twenty different patients, affected

No. LXV. O

with the same malady ; and the administration is entrusted entirely to some young inexperienced pupil, who cannot be expected to know how to accommodate a remedy to different cases. Then, according to the report made to him, the physician takes upon himself to commend or to condemn the treatment that has been pursued."

Such a *tableau*, drawn too by one of the leading hospital surgeons in Paris, strongly confirms the truth of the opinions which the *Medico-Chirurgical Review* has uniformly professed in reference to French medical practice. Every one has heard of the satire in one of *Moliere's* comedies, where the Doctor is represented as ordering all the patients on one side of a hospital ward to be bled, and all those on the other side to be purged, without reference to their maladies ; and here we have the assurance of such a man as *M. Lisfranc* that the picture is not very inapplicable to some of his confreres at the present moment in the French metropolis.

" Truth is strange, stranger than fiction."

—*La Lançette Française*.

M. LISFRANC ON SOME OF THE DISEASES OF THE MAMMA.

..... " Women will come to you complaining of pains in their breasts ; you examine them, but finding no mark of swelling, heat, or redness in the parts, you may be tempted to tell them that there is very little the matter with them. Be on your guard ; the mischief may exist elsewhere, and the *mammæ* may be only sympathetically suffering. Direct your attention to the state of the uterus ; and always bear in mind that each menstrual effort determines a consentaneous increase of vital energy in the *mammæ* : in some cases, this increased sensibility exists from one monthly period to another, and will give rise to constant sharp pains in the glands.

By relieving the existing uterine irritation, the distress in the *mammæ* will speedily subside.

In another set of cases, however, these pains in the *mammæ* may arise from a neuralgic affection of their own nerves, quite unconnected with any uterine ailment.

Now, although there may be no signs of inflammatory action present, the surgeon should never neglect the relief of these neuralgic pains ; more especially as the very existence of severe pain in any part, and especially if that part be of a glandular texture, is apt to induce an insidious chronic excitement of the capillary vessels, which may ultimately terminate in morbid structure.

Let us now consider another set of cases, in which the symptoms are again different.

" A woman, without having received any blow or injury on her breasts, may experience in one or in both of them a dull heavy pain, which is more or less severe at times, but which seldom ceases entirely : its chief seat exists usually at one spot, which, however, exhibits no visible signs of engorgement or inflammation. What are we to think of such a case, which is of very frequent occurrence ? We should suspect that there exists, either in the granulations of the gland or in its cellular tissue, a chronic inflammatory action, which is, as it were, still latent, but which if neglected will almost inevitably lay the foundation of some serious degeneration of tissue.

We have said that such a state of things may come on without having been preceded by any external violence to the mamma. In some cases however, as might be imagined, it follows upon a blow or other injury—the immediate effects of which, having been removed at the time by leeches, &c. may have been entirely forgotten. A fixed pain continues, nevertheless, in one point, felt per-

haps only on pressure; it is usually more troublesome at each catamenial period; and yet there may be no visible engorgement or hardness even then. In such a case as this, be assured that there exists a latent chronic inflammation. I have repeatedly seen engorgements in the first place, and subsequently degenerations of structure, supervene, after the lapse of three, six, or twelve months, in women who had neglected to use the means which I had recommended at the time. The use of over-tightly laced stays, which keep up an unnatural compression of the mammæ, is a not unfrequent cause of permanent mischief."

"In the treatment of chronic tumours of the mamma, the first thing to do is to ascertain whether there be any latent and disguised inflammatory action in or around the swelling. This may generally be easily determined by observing the effects of pressure with the fingers. Whenever there is decided pain, even although this be only of a dull character, we may apprehend the existence of vascular excitement in the part. Under such circumstances the application, to be repeated in 8 or 10 days if necessary, of leeches and then of laudanised poultices, is the most important remedy. The arm of the affected side should be constantly suspended in a sling; the diet should consist of light food; and tepid baths should be used twice or thrice a week.

The practice of smearing the mamma with a thick layer of strong mercurial ointment, to be renewed four or five times in the twenty-four hours, and to be continued steadily for a few days, as recommended by M. Serres, is approved of by M. Lisfranc. He also recommends the internal use of certain depurative decoctions, made with saponaria, scabiosa, and some bitter roots, and also of small doses of hemlock—the powder of which, in the dose of a grain at first to be rapidly increased, he greatly prefers to the extract.

When all traces of inflammatory action have quite ceased, we should then commence the employment of discutient means. *Compression* by means of strapping and of bandages, &c. is one of the best of these. It is a remedy, however, that should be used with great caution at first; as it is very apt to re-excite inflammatory action.

Douches, of simple and afterwards of aromatised vapour, have sometimes the most pleasing effects on indolent tumors of the mammæ.

Friction with various ointments and embrocations—containing the ioduret of lead, the hydriodate of ammonia and of potash, various preparations of mercury, &c.—may often be used at the same time with advantage. Indeed, in the management of most chronic complaints, it is a most useful practice to combine the use of various means at one and the same time. Thus in the present set of cases, the vapour-douches, compression, and friction may be all employed together, not omitting the administration of appropriate remedies internally, of which the hydriodate of potash in conjunction with bitter infusions is perhaps one of the best."

The following remarks of M. Lisfranc on the advantages of local bleedings in cases of genuine scirrhus and cancerous disease are of practical importance.

"Twenty years ago, it was pretended that cancer might be cured by antiphlogistic remedies. M. Lallemand, of Montpellier, published several cases of cancer of the lip as cured by these means; Broussais also narrated some similar cases, and I myself added a few.

But cancer of the skin is not cancer of the cellular, and far less that of the glandular, tissue. Nevertheless I attempted to cure ulcerated cancer of other parts without having recourse to extirpation of the diseased parts; and in these attempts I often observed that the ulceration in the centre of the diseased swelling became for a time arrested, and as it were withered, but speedily began to spread as before, while the amelioration of the circumference was progressive and permanent. At that time I was content with merely observing and recording the fact, without endeavouring to explain it; but gradually opportunities of

more attentively examining the pathological phenomena in scirrhus and cancerous tumours were afforded me. The following was the result of these investigations. In the circumferential part of the tumour I found all the usual phenomena of pure inflammation; nearer the centre there was simple white induration; still nearer, this white induration was observed to have passed into the state of scirrhus; and in the centre itself was the genuine cancerous degeneration. Now then, the judicious employment of leeches and other antiphlogistic remedies may succeed in removing all the circumferential morbid changes, although we cannot hope that they will dissipate, or even arrest, the central degeneration. This, however, is an important end gained; for in this manner we may reduce the size of the swelling to one half of its former size, and thus render the operation, which is necessary, less formidable and severe independently of the surrounding parts being at the same time brought into a state which is more healthy and more disposed to speedy union and cicatrisation. I again repeat, however, that we must not expect, in any case, to get rid of the central or genuine cancerous tumor by the use of antiphlogistic or of any other local means; and I have seen much mischief follow from an unwisely prolonged attempt to effect this."

In a patient, whom M. L. recently saw, the swelling of the mamma had been reduced by at least two thirds, and then it became and remained stationary; nevertheless, she was recommended by her medical attendants to persevere with the use of leeches, &c. For a month no additional progress had been made; and therefore M. *Lisfranc*, who was now called in, advised the immediate extirpation of the tumor. Unfortunately the lady was induced, by the suggestion of some friends, to defer submitting to it for several weeks; a *cancerous explosion* took place, several new ulcerated points formed, and the patient died.

As a general rule, M. *Lisfranc* recommends that the operation should not be delayed, whenever there has been no visible amendment of the swelling for three or four weeks past. If such be the case, it is not only a fruitless annoyance of the patient to continue the use of leeches and other antiphlogistic remedies, but the cancerous disease may thereby be permitted to make serious progress, and thus render the removal of the tumor more difficult and severe.—*La Lançette Française*.

ON THE INFLUENCE OF SPLENIC ENGORGEMENTS ON AGUES.

It is quite unnecessary to do more than simply allude to the very great frequency of congestion and enlargement of the spleen after attacks of intermittent fever. The important question is, what is the effect of such a state on the health of the patient? and how is it best remedied?

M. *Bally* was the first to shew distinctly that the marked tendency to the relapse of intermittent fevers, after they have been seemingly got rid of, is mainly attributable to the engorgement of the spleen which is permitted to remain. The fever may have quite ceased to return for one or even several months, but the patient, notwithstanding, does not recover his former health and strength; his complexion remains pale, his appetite is variable, his digestion is not good, and his muscular energy remains feeble; and at length the periodical feverish symptoms begin again to make their appearance.

In a recent lecture at the Hôpital de la Charité, M. *Nonat* has inculcated the opinions of his predecessor with much ability.

"We will not affirm," says he, "that hypertrophy of the spleen produces intermittent fever; this has its *point de départ* in some unknown cause, whether of the nature of miasm or otherwise, and inappreciable in its nature; but certainly it cannot be denied that such hypertrophie is an occasional and predisposing cause, which keeps the system under the influence of this primitive agent."

By far the most potent agent in subduing this enlarged state of the spleen is the Peruvian bark. But this must be given in larger doses than is usually done. It is more than probable that the frequency of the relapse of agues is mainly attributable to the insufficient administration of this most valuable specific. Such was the opinion of *Morton*, *Sydenham* and *Torti*; and the experience of the best practitioners in the present day confirms its truth.

M. Nonat remarks: "*M. Bally* was the first in France who distinctly pointed out the efficacy of quinine in the treatment of intermittent fevers, and more especially in those cases which are accompanied with considerable engorgement of the spleen. According to this experienced practitioner, we should commence with eight or ten grains of the salt every eight hours, and raise the dose quickly, if the case be obstinate, to 40 or even 60 grains in the course of the day. I have seen *M. Bally* obtain, by this method, a success which it is vain to expect from the same remedy when administered in the usual manner."

M. Piory assures us that under the use of large doses of quinine—from 40 to 80 grains in the course of twenty-four hours—he has seen considerable engorgements of the spleen subside in a few days.*

M. Nonat has investigated this subject of practical medicine with much zeal: and the conclusion at which he has arrived is, that the quantity of quinine required to effect a permanent cure of an ague, and of the induced enlargement of the spleen, is almost always in a direct ratio with the amount or extent of this enlargement. "After a great many experiments," he says, "I have satisfied myself that the dose of quinine should vary from 12 to 40 or 50 grains in the course of twenty-four hours, and that it must be proportioned to the increase in the size of the spleen; such are the doses which we have been in the habit, for the last three years, of using with such marked success. Hitherto we have met with very few cases indeed of enlargement of the spleen, which have resisted this method of employing the quinine."

The length of time, during which it may be necessary to continue the use of the remedy, varies much according to several circumstances, such as the extent of the enlargement, the duration of the complaint, the constitution of the patient, and so forth. But, whatever be the case, its employment should not be discontinued until the viscus has resumed its normal dimensions. In some cases, the stomach will not bear the large doses that are required; we must then administer the quinine in enemata, and in still greater quantities. To derive success from this mode of treatment, it is quite necessary that the enemata be retained; else all the febrifuge effects of the quinine will not be obtained. "When this condition is fulfilled," says *M. Nonat*, "I have in every case observed that the fever ceased, and the engorgement of the spleen subsided, as quickly as when the quinine had been administered by the mouth; and this too in patients affected with most obstinate agues which had resisted the ordinary plan of treatment in various hospitals."

M. Nonat does not expect much from the endermic use of quinine, as recommended by some physicians: the fever may indeed be cured, but not the splenic disease, in this way. He has tried in a few instances the *iatrolectic* method, or that of rubbing the quinine in, in the form of an ointment. Forty or fifty grains of the salt were mixed with two ounces of lard, and the patient was directed to rub in some of this ointment on the groins and armpits three times a day. Under this mode of treatment, the fever has been known to cease, and

* *Dr. Elliotson*, in some of his clinical lectures reported in the *Lancet* five or six years ago, very forcibly inculcated the same views as to the treatment of the enlargements of the spleen, which so frequently follow intermittent fevers."
—*Rev.*

the splenic enlargement to subside a little; but never to any considerable extent, or permanently.

Before closing these remarks, we should mention that, in most cases of ague attended with enlargement of the spleen, the local abstraction of blood, by cupping or leeches, from the left hypochondrium will greatly promote the efficacy of the quinine.—*La Lanquette Française*.

M. CAZENAVE ON SCABIES.

The following extracts are from a lecture which M. *Cazenave* recently delivered at the hospital St. Louis, to which, it is well known, by far the greater number of patients affected with cutaneous diseases in Paris are sent.

"With respect to the seat of, or the parts of the body most frequently affected with, the itch, it is right to observe that certain conditions and occupations of life, under the influence of which the disease is apt to be developed, induce varieties which deserve to be noticed. Thus in smiths and dyers we rarely observe the scabious eruption on the wrists or between the fingers; whereas these are just the parts which are almost always affected in tailors and seamstresses—who constitute a large proportion of itch-patients admitted into the Hospital St. Louis. M. *Cazenave* has never seen the face affected with the disease."

"When the disease is left to itself, more especially in young plethoric persons, it is apt to become complicated with other forms of cutaneous eruption—most frequently of the impetiginous or ecthymatous character. It is from not being aware of this complication, that some writers have described scabies as a pustular disease."

"It is now universally admitted that the proximate cause of the itch is the presence of an animalcule—the *acarus scabiei*. It is well known how frequently the truth of this idea has been questioned. The cause of the difficulty of detecting the insect was first explained by M. *Renacci* in 1834, who shewed that it is seldom found in the vesicle itself, but generally in the groove of the skin leading from it, and which the insect itself makes under the epidermis."

"*Diagnosis*.—Every medical man knows well the occasional difficulty in determining whether certain cutaneous eruptions are truly scabious or not. This is the more annoying, as the appropriate treatment depends on the correct diagnosis of the disease: an error in this respect may be followed by the most troublesome consequences. Scabies may be confounded with some of the forms of *eczema*. In the latter disease, the vesicles, even when they are situated in the fingers and on the inside of the arms, are flattened on their summits, and not pointed as in the vesicles of genuine scabies; likewise, they are more congregated together, and they appear on the back of the hand as well as along the line of the flexure of the joints; the pruritus too accompanying *eczema* is more of a burning or scalding character, and not subject to those exacerbations so characteristic of the genuine itch.

Herpes appears in patches, and can scarcely be confounded with scabies.

Prurigo is not so readily distinguished. Apart however from the primitive characters of the eruption, it in most cases affects chiefly the back, shoulders, and the limbs, rather along the line of extension, than along that of flexion.

The papulæ exhibit at their apices a blackish crust; and the itching, though troublesome, is never comparable to that of genuine scabies.

But we must acknowledge that, in some cases, it is impossible to discriminate with confidence the exact nature of the eruption."

"It is not unfrequent to observe in persons, who have been

affected with scabies, a vesicular eruption returning every year, especially during warm weather. This affection is not strictly scabious, nor is it contagious. It does not therefore require the specific treatment necessary in itch; and very generally it will disappear under the local application of cooling washes."

"Treatment.—The ointment generally used by M. Bielt is one of the best. It consists of two parts of sulphur, one of subcarbonate of potash, and eight of lard. The lotion of *Dupuytren*—composed of four ounces of sulphuret of potash, a pound and a half of water, and half an ounce of sulphuric acid—will often succeed where the patient is unwilling to rub in the sulphur ointment. It has however the twofold disadvantage of being very irritating, and very offensive to the smell.

One or two brisk doses of a cooling purgative will always be useful. No other internal medication is necessary."—*La Lançette Française*.

ON CONVULSIONS DURING PREGNANCY AND DELIVERY.

The following general conclusions close a very able memoir on the above subject from the pen of one of the most experienced accoucheurs in Paris, M. *Capuron*.

1. Convulsions occur much more frequently during a delivery at the full period than during a miscarriage—doubtless, from the greater severity of the pains and the consequent greater disturbance of the circulatory and nervous systems. Indeed it is truly astonishing that such protracted suffering as almost always accompanies a first labour does not in every instance induce some convulsive attack.

2. The majority of the women, who are seized with convulsions during pregnancy or labour, are of a sanguineous and plethoric constitution, and usually of an irritable and highly nervous temperament.

3. The attack is often preceded by some precursory symptoms, such as headache, confusion, noises in the ears, twitches of the tendons of the fingers or toes, or of the muscles of the face, and a tendency to bewilderment and forgetfulness. The patient is usually much depressed in her spirits, and very apprehensive of the result of her labour.

Perhaps, however, generally the convulsions come on unexpectedly and without any premonitions.

4. The convulsions, after lasting for a longer or shorter period of time, usually terminate in deep somnolence, during which the respiration is heavy and more or less stertorous, and the pulse is full and large, such as is commonly felt in sanguineous apoplexy: occasionally a partial tetanic contraction of the jaws continues for a considerable time after the abatement of the general spasms.

5. From what I have observed, I am inclined to be of opinion that an attack of convulsions during a premature labour is on the whole more dangerous than a similar attack if the labour should be at the full period of gestation.

We might expect that this should be the case, when we consider that the cervix uteri is generally harder, less pliant, and more resisting, if labour happens to come on in the seventh or eighth month of pregnancy.

6. According to the results of my experience, local and general bloodletting and the use of warm relaxing baths are the most powerful means both to prevent and to arrest the attacks of puerperal convulsions. The blood-letting relieves the congested vessels of the head, and probably also the sanguineous accumulation in the uterus, and the warm-bath takes off the spasmodic state of this organ and of every other part of the body, by inducing a derivative action towards the surface. As auxiliary means of occasional utility, the extract of

belladonna rubbed on the cervix uteri, and some of the milder preparations of opium given internally, may be mentioned with praise.*

7. If we should find on examination that the cervix uteri forms a rigid band around the head or neck of the child, and that the labour-pains make little or no impression upon it, even after blood-letting and other relaxing means have been used, we should not hesitate to divide the constricting portion at one or two places of its circumference with a bistoury. In all such cases, it becomes the accoucheur to ascertain the state of the urinary bladder; as it has been found, in more than one instance, that over-distention of this viscus has powerfully predisposed to, if it has not actually caused, the occurrence of convulsions during accouchement.

If the head of the child be within reach of the forceps, we should never hesitate at once to finish the labour by extraction. But if this be impracticable, and the convulsions still continue, recourse must be had without delay to the use of the perforator and crotchet.—*L'Experience.*

CHILBLAINS TREATED WITH MUSTARD BATHS.

Mustard powder enters into the composition of several ointments which, at different times, have been strongly recommended in the treatment of chilblains: it is contained in the pomade of *Swedjaur*, which has been so long known and esteemed.

A writer in the *Journal des Connoissances Medicales* alludes to the good effects of mustard baths in the following terms:—

“A friend of mine suffered so much from chilblains, that he could scarcely walk across his room. As he was afflicted with severe headaches at the same time, I advised him to use a sinapised foot-bath for two or three nights. Finding himself much relieved both in head and feet, he continued their use for nearly three weeks. This was in the month of November. He had no return of his chilblains during the whole of the winter; and, in the following year, by having recourse to the baths, he again remained entirely free from his old most troublesome complaint.”

Remark.—A very good application to that most vexatious malady, a chilblain, is the diluted tincture of iodine. The effects of this remedy resemble, in many respects, those of a solution of nitrate of silver; both having a very marked, and often a singularly beneficial, influence on cutaneous complaints, especially when these are connected with a chronic or subacute inflammation of the part. We have recently used the iodine tincture with good effects in some forms of porrigo.—(*Rev.*)

MEMORANDA ON CUTANEOUS TRANSPLANTATIONS.

..... “When erysipelas comes on in the face after a rhino-plastic

* M. Capuron omits to mention two of the most powerful remedies in the subjugation of puerperal convulsions—viz. the tartrate of antimony, and full doses of camphor. The former may be given in doses of half or of a whole grain, combined with a drachm of syrup of poppies, every quarter of an hour, (after venesection) until the spasm relaxes. From five to ten grains of camphor with fifteen to twenty drops of tincture of henbane, administered every half hour or so, constitute also a most potent remedy.—(*Rev.*)

operation, it is usually arrested at the edges or limits of the restored part. This was especially remarkable in the case of a patient operated on by *Dieffenbach*, at the hospital St. Louis in Paris.

M. Ricord also has published a similar instance. On the seventh day after the operation, the patient began to experience pain under the chin, and at this part an erysipelatous redness was visible. Next day this had extended over the entire face, the newly-made nose alone remaining intact; it was cold, insensible, and, as it were, indifferent to what was going on all around it. Although the local inflammation was very severe, it was ultimately subdued; yet at no time did the new nose participate in it.

Dieffenbach mentions that one of his patients, on whom he had operated, was attacked with jaundice, during which the entire face—with the exception of the nose, which remained white—became as yellow as a guinea."

M. Phillips insists very particularly on the necessity of keeping the newly-formed organ very cool with refrigerant lotions, and even of drawing blood freely from it as well as from the adjacent parts, and never of applying—as has too often been done—spirituous or other stimulating washes for the purpose of exciting the circulation. The condition of the transplanted tissues seems to be very nearly analogous with that of frost-bitten parts; in the case of which, it is well known, the application of heat and exciting substances must be carefully avoided. As illustrative of the same fact, *M. Phillips* goes on to state:—

..... "*Dieffenbach* remarked that in cholera patients, who recovered, the healing of wounds was effected with greater rapidity than in persons in perfect health; as if the diminished activity of the cutaneous circulation rendered it better fitted for any plastic processes. He observed that the wound bled very little, if at all, the dermis being almost void of blood; and that the edges of the incision were not red as usual, but rather of a yellowish-red colour. Again, if we call to mind the surprising unions of parts which have been entirely separated from the body, are we not led to conclude that the immediate union of wounds will be the more readily effected just in proportion as the parts are the least gorged with blood? The management, therefore, of rhino-plastic injuries should be so directed as to bring and keep the tissues in this state of vacuity."

M. Phillips proceeds to point out an error which is too commonly committed by most surgeons in the treatment of recent wounds, that of bringing the edges in contact as quickly as possible after their division, and before the oozing of blood has ceased. Now, it is not until this has quite stopped, that the secretion of the coagulable or plastic lymph commences; and it must surely be obvious that, if any coagula of blood are interposed between the lips of the wound, the agglutinative process must necessarily be impeded. *Dieffenbach* observed, in some experiments which he performed on rabbits, that the chances of union, after the transplantation of a portion of the integuments, were always greater when the flap was not replaced for several minutes after it had been excised.

In most of the cases, too, of successful union of detached noses or fingers in the human subject, some time has accidentally elapsed between the occurrence of the accident, and the re-application of the part."

..... "That a vitality continues for a considerable time in parts detached from the body, is often very apparent after some operations.

Thus in a case of hydro-sarcocele, where *Dieffenbach* removed a large portion of the skin along with the diseased mass, he noticed that, in about a quarter of an hour afterwards, this portion of skin had contracted upon itself, so as to exhibit the usual puckered appearance of the scrotum on leaving a very cold bath. On stretching it out, and pouring cold water upon it, it again contracted into numerous wrinkles."

M. Phillips proceeds to state that—

"When a part is entirely detached, its natural red colour disappears, and it becomes very pale, although very little blood has flowed from it. The vessels of the surface contract, and drive the blood into the sub-dermoid tissues. In a few minutes after the separation, this great paleness diminishes; some dark blood oozes from the divided edges; and we may ascertain with a magnifying glass that it is expelled by the contraction of the vessels. If the blood be wiped away, the wound again becomes red; but the blood is now thinner, and if again removed it becomes quite watery, and the edges begin to be coated with coagulable lymph; they then contract upon themselves, so as to cause the centre to bulge out."*

Should the hæmorrhage from any of the divided blood-vessels, after auto-plastic operations, prove troublesome, *torsion*, and never the *ligature*, should invariably be had recourse to. The presence of a ligature, however minute, is always most unfavourable to immediate union. If the stopped blood-vessel seems gorged with blood after the hæmorrhage has ceased, one or two scarifications should be made, to remove the sanguineous congestion; which we have already explained is very prejudicial to the success of the reparative process.

M. Phillips thus points out some of the anatomical conditions of the flap taken from the forehead in a rhino-plastic operation, on which its success very materially depends.

"It is indispensable that it should contain one artery at least. Hence the importance of prolonging the incisions to the angle of the eye, so that the pedicle of the flap contains the internal angular artery to supply it with blood. And then again, it is equally necessary that the blood, which is conveyed to it by the arteries, should be returned by veins, else the new nose will perish from congestive asphyxia. Indeed it is wonderful that this does not occur oftener than it really does, when we consider that not only are almost all the direct communicating branches between the arteries and the veins cut across, but that the blood in the divided arteries is prevented, in a great measure, from escaping, in consequence of the compression of the edges of the flap by the numerous sutures used to retain it in position."

"The destruction of the flap may arise from three different causes—from defective circulation, from excessive or superabundant circulation, and from suppuration.

If the pedicle be twisted too firmly, the vessels must necessarily be compressed, and the circulation through them be consequently more or less interrupted: the flap in consequence becomes pale, loses its heat, and speedily mortifies. But this does not occur so frequently as the mortification from accumulation or congestion of blood in consequence of its obstructed return through the veins. Under such circumstances, the mortification usually takes place in that part of the flap which is furthest distant from the pedicle.

* The convexity of the flap exists even after the most successful union; it is the more decided when the substance of the flap is thin, and much less so when a layer of muscular substance has been detached at the same time.

This tendency of the flap to contract around its edges, so as to cause the centre to become convex, is of great utility in rhino-plastic operations; as it is by this invariable law that the surgeon is able to secure a proper prominence to the new nose. When a flap has a free edge, which is not brought and kept in contact within another incised surface, this edge turns inwards upon itself and contracts very close adhesions. It is in this manner that the nostrils of the new organ are apt to become quite obliterated, if precaution has not been taken to evert and secure by a stitch or two a portion of the flap, so as to induce an immediate union.

After the asphyxia now described, suppuration is the most formidable evil to be dreaded in the management of rhino-plastic operations. The destruction commences at the edges, which swell, puff out, and separate from each other. This calamity is more apt to occur when the twisted suture has been used."*—*Bulletin Medical Belge.*

M. TROUSSEAU ON THE POMMADE AMMONIACALE, AND ON HEAT AS VESICANTS.

The formula in the French Codex for the preparation of *Gondret's* Ammoniacal Pommade is as follows:—Take of mutton suet one ounce, lard one ounce, and liquid ammonia (of 25° strength) two ounces. Melt the suet and lard in a wide-mouthed bottle, and then, having added the ammonia, stopper it and shake the mixture well together. Keep the bottle closed in cold water—shaking it occasionally—until the pommade has become quite cold.

M. Trousseau observes, that the pommade made according to these directions, is generally much too hard and consistent for use, at least unless the weather be warm. He proposes two different formulæ, one for Summer and the other for Winter. The former is to use three parts of lard, one of suet, and four of ammonia; and the latter to use equal parts of lard and of the ammonia.

The pommade, which is met with in most druggists' shops in Paris, is far too weak, in consequence of its having been prepared with ammonia of insufficient strength, and probably also from its being kept too long.

There may be another reason still: if the ammonia be added while the fatty matters are very hot, a great portion of it must be volatilised, and the pommade is necessarily weakened.

In applying this vesicatory, some recommend that a portion be put into a thimble, or in a short glass tube, and held firmly on the skin for some time, to prevent the escape of the ammoniacal vapour; while others advise, that it be spread directly on the part which is then covered with a small portion of diachylon plaster.

M. Trousseau disapproves of both methods, as "it is indispensable," he says, "that the effects of the application should be visible all the while." When first applied, the patient experiences a sense of coldness in the part; then a minute or two afterwards a slight burning heat, which gradually increases for three or four minutes, at which time it is at its maximum: it then remains stationary, and sometimes even begins to abate, although the *escharification* of the skin is going on all the time.

We must not, therefore, judge of the effects of the ammonia solely by the effects it produces.

The rule given by M. Trousseau, for regulating the length of time for its application, is to watch the appearance of the red circle around the part: whenever this is observed, the pommade should be removed. It is sometimes even not necessary or proper to wait until the red areola be observed, as the epidermis may be raised, before it appears.

The length of time necessary for the pommade producing its full effects,

* If the destruction from this cause be considerable, it may be necessary to perform a second operation, and re-transplant a fresh portion of healthy integument. But if it be only at one angle, we may succeed by the repeated application of the tincture of cantharides, in exciting the granulating process sufficiently to fill up the ulcerated space.

varies much according to the part on which it is applied: sometimes it will vesicate in two minutes, at other times ten or twelve minutes are required.

As the inflammatory areola does not always make its appearance, M. *Trousseau* recommends that the pommade be wiped off at the end of five or six minutes, and reapplied if necessary; this may be repeated until the epidermis begins to be raised. We are never to continue the application until any appearance of a vesicle or blister is observed; but only until we find that the epidermis can be detached by rubbing it gently with the finger. We frequently find that it can then be removed in one piece, and that the chorion beneath can be fairly exposed. *Now this is the very condition that is desired.* The dermis is not escharified in any degree; but continues to retain its absorbing energies, so that we may depend upon the success of any endermic medication that we may wish to try.

Should the pommade have been so long applied, that a complete bulla has been raised, it will generally be found that the dermis, from having been too much irritated, does not absorb very readily; and, moreover, that a cicatrix or mark is left after the blister has been healed. This latter consideration is not to be neglected, seeing that the pommade is so extensively used in the treatment of facial neuralgia in both sexes.

Heat as a Vesicant.

We shall only mention the application of boiling water under this head. By far the most convenient method of using it is in the manner suggested by M. *Mayor*, and known in France under the somewhat droll appellation of M. *Mayor's hammer*. It consists in simply immersing the iron part of a common hammer in water boiling on the fire for a minute or two, and then applying its round disk on the part which we wish to vesicate. The pain is sharp, and when the hammer is removed, the skin is observed to be discoloured and as it were somewhat sunk in. M. *Trousseau* very justly remarks, that the great objection to the use of heat, applied in any way, for the purpose of inducing vesication, is that the part is very generally more or less completely escharified—in consequence, perhaps, of the albuminous portion of the animal fluids being necessarily more or less completely coagulated. He approves of M. *Mayor's hammer* as a very good means of producing an eschar, such as may be desired in the neighbourhood of diseased joints; but rejects it altogether as a vesicant in cases where we wish to try the endermic effects of remedies in neuralgia and such like diseases.—*Journal des Connoissances Medico-Chirurgicales.*

ON THE GREY DEPOSIT UPON URINARY CALCULI, BY M. CIVIALE.

The main object of M. *Civiale* in the following remarks (derived from the third volume of his recent work on Calculous Diseases) is to shew that the use of chemical remedies is not only quite inefficient, but is positively pernicious, in a multitude of cases, by promoting the deposit of additional matter on the calculi which are in the bladder.

After alluding to the great variety, in point of chemical composition, of calculi, he says:—

“We cannot ever know exactly in the living subject the species of stone which exists in the bladder; it is not possible to do more than acquire merely vague notions, which are quite insufficient to direct us in the choice of our remedies.

(This assertion is far too positive and dogmatic: the English surgeon knows very well that he can generally predict the nature of the calculus, before it is extracted.—(Rev.)

Hence there must happen one of two things; either the remedies employed are inefficient, or they must exert some real effect, which may be useful in one case, but injurious in another. In my opinion, there is not a single decisive instance on record of the solution of a calculus in the bladder. Alas! there are, on the other hand, too many in which the disease has been aggravated by the use of chemical solvents. If the use of these remedies does not tend directly and immediately to promote the deposit of further matter on the surface of the existing calculus, it is, in a multitude of cases, apt to induce various morbid conditions of the urinary apparatus, under the influence of which the grey or white layer, of which I am about to speak, is generally secreted. No one, indeed, who is in the habit of seeing much of calculous diseases, can fail to be struck with the frequency of this layer or calculi, when alkaline remedies have been taken for a length of time."

M. *Civiale*, like so many of his countrymen, is apt to carry all his doctrines *a l'outrance*. The *abuse* of alkaline remedies has, we are ready to admit, often done harm; indeed it must do so on chemical principles. The rule of practice, which is invariably followed by the scientific surgeon, is every now and then to *test* the urine of a calculous patient, and never to continue the employment of either alkalis or acids beyond the neutralization of the acid or alkaline condition of the secretion. It is therefore scarcely necessary for M. *Civiale* to condemn the use of alkalis in the phosphatic or oxalate of lime diathesis, or to take any credit to himself for having pointed out the evils of such a practice: no one in the present day is so foolish as to regard alkaline remedies as universal solvents of calculi.

M. *Civiale*, indeed, mentions the names of *Brodie* and *Prout*, as men who have paid attention to the occasional alkaline state of the urine, and the circumstances which are apt to induce it; but his notice of these distinguished practitioners goes no further; and he takes the sole credit to himself for having showed that a diseased state of the bladder and kidneys has a marked influence on the nature of the deposit from the urine. We do not mean to rob M. *Civiale* of his share of the credit of having improved the treatment in calculous diseases; but let him be satisfied with his own portion.

In illustration of his particular views he makes the following remarks on a case, where it had been alleged that the mineral waters of *Vichy* had begun to exert a solvent effect on a urate of soda vesical calculus, in consequence of its surface exhibiting a layer of white deposit:—

"Now this white layer, which our confrere imagined to be the effect of the mineral waters, was solely the result of a new deposit, which had taken place in consequence of the inflammatory action on the mucous coat of the bladder. Whatever be the nature of the calculus, no sooner is a vesical catarrh induced, than this white or greyish deposit inevitably supervenes, whether alkaline or acid remedies be taken or not. I could quote a thousand cases in proof of this point: let one suffice. . . . In an old gentleman, the bladder was the seat of a purulent catarrh, which ultimately proved fatal. Twenty-six minute calculi—all of uric acid or urate of ammonia—were found, on dissection, in it; these were all invested with this ash-coloured deposit. The left kidney contained so large a number of red granules of uric acid that it took a considerable time to count their number. But they were all of a lively red colour, and not one of them exhibited the greyish surface observed on the vesical calculi.

Surely then we must admit that this greyish deposit was the result of the vesical catarrh, as all the calculi, vesical as well as renal, were essentially and primarily of the same nature."

M. *Civiale* next alludes, in illustration of his views, to the deposit which is apt to take place on the extremity of a sound or catheter, when left so long in the bladder as to give rise to irritation of its mucous membrane: this being always of the greyish character, such as we observe on the surface of calculi.

The quickness with which this takes place is always in proportion to the amount of the irritation excited, and to the degree of morbid action induced in the mucous surface of the bladder. To prove that such is the real cause we have only to omit the use of the sound for some time, and use means to soothe the irritation; and it will be found that, whenever this ceases, the tendency to deposit is at once checked.

The relief, which patients derive from the use of alkaline waters, is in reality often very delusive. The urine indeed, which has perhaps been turbid, may have become limpid and unirritating, and, with this change, the calculous symptoms may be considerably mitigated. Even small calculi, which have lodged for a considerable time in the bladder, may be now discharged; and yet, all this while, the larger calculi, which cannot pass through the urethra, may actually have increased in size.

The explanation of these seemingly contradictory occurrences is not so difficult as may be imagined. The diuresis induced by the use of the alkalis will account for the change in the appearance of the urine; and as to the relief of the calculous symptoms at the same time, this is very often owing to the sharp edges of the calculi becoming rounded from the deposit of the white layer upon them. *M. Civiale* is decidedly of opinion that in numerous cases the prolonged use of alkalis and alkaline waters, such as those of Vichy, Carlsbad, &c. has the effect of inducing irritation of the vesical lining, and of consequently favouring, instead of checking, the further deposition of earthy matter on the surface of calculi in the bladder.

The relief in such cases is altogether attributable to the surface of the calculus becoming smoother and its edges more rounded, and not to any incipient solution of its substance, as is generally imagined. That such is the truth, we have often a most satisfactory proof in the treatment of calculi by lithotripsy.

The fragments of a calculus, if they lodge in the bladder for some time after it has been broken, and especially if their presence has excited irritation of its mucous membrane, are found to acquire gradually a more rounded figure, in consequence of the sharp angles becoming invested with a coating of the grey-coloured deposit. There has been no wearing down of the angles, but on the contrary, an addition of substance to and around them. That such is the case may be easily shewn by breaking the white crust on their surface; and then all the sharp angles are at once perceived.

Because this white crust often exhibits a roughened, and as it were corroded, surface, it has been hastily imagined that the alkalis, which have been administered, have been exerting a solvent action on the crust, whereas, in truth, a continued deposition of new matter has actually been taking place all the time. That small calculi are occasionally discharged by the urethra, after a prolonged use of alkaline remedies, is quite true; but such an occurrence is generally attributable not to the diminished size of the calculi in consequence of partial solution, but to the rounded form, which they have acquired, causing less irritation and spasm of the urinary passages.

M. Civiale has, in his fifth letter, adduced many cases in proof of the preceding views.

In particular, he mentions that of *Dr. Bigel*, a physician at Warsaw, who, after undergoing the operation of lithotripsy, went to Carlsbad for the purpose of drinking its celebrated waters. While residing there in 1835, he passed a number of minute calculi of a white appearance and not very firm consistence, whereas immediately and for some time after the operation the fragments, which were discharged, were all hard and of a brown colour.

Dr. Bigel was so delighted with this *seemingly* most favourable change, that he published a memoir on the remarkable solvent powers of the Carlsbad waters. He there stated that the calculi in his own case were white, not only on the surface, but nearly throughout their entire thickness. When however they were

examined by M. *Creusburg*, a chemist, a very different report was made; he found the exterior white crust was very thin and might be readily detached with the nail, and that it enveloped a hard red kernel, so to speak, which required the blow of a hammer to break it in pieces. The calculi were of different kinds; some were of reddish-grey exterior, others of a brownish red, and others were nearly white. The first set consisted of uric acid, urate of ammonia, oxalate of lime, and of a minute portion of oxide of iron; while in the white-coloured ones the nucleus consisted of the same ingredients, now enumerated, but the outer crust or envelope was composed of phosphate of lime with a minute proportion of phosphate of soda, urate of ammonia, and mucus. "All these results," says M. *Civiale*, "are highly important; more especially the last-named one; as we may fairly infer from it that no particular action had been going on in the bladder of Dr. *Bigel* different from what occurs in calculous patients who are not taking any mineral waters."

The relief, which Dr. *Bigel* experienced whilst at Carlsbad, was far from being of long duration. Two months afterwards he began to experience all his former distress, and again he was obliged to have recourse to a lithotritic operation. For the next twelve-months he continued free from any urinary concretions, although, every now and then, he passed a quantity of gravelly matter. M. *Civiale*, adds:—

"Dr. *Bigel*, who does not seem latterly to believe in the solvent virtues of the Carlsbad waters, attributes the cessation of his gravel symptoms to the return of gouty rheumatism in his shoulder, to which he had been subject for nearly thirty years before his urinary complaint commenced, and which, he thinks, has been recalled by the use of the sulphureous waters of Warmbrun."

M. *Civiale*, after some further remarks on the indiscriminate and prolonged use of alkalis and alkaline mineral waters, informs us that one or two of the most experienced physicians in Paris have been led by his writings to entertain similar opinions to those now announced.

"MM. *Leroy* and *Segalas*, in 1837, spoke most favourably of the solvent effects of the mineral waters of Vichy; but since that time they have found reason to change their opinions. They have communicated to the Academy several facts, which tend to prove that, under the influence of these waters and also of alkaline preparations, calculi have increased in size."

In conclusion, M. *Civiale* repeats his opinion, that there is not one authenticated case on record of a solution of a urinary calculus in the bladder from the use of any remedies, and that, on the contrary, we have too much reason to suspect that, in a great number of instances, the long-continued administration of pretended solvents has seriously contributed to the aggravation of the evil.—*La Lançette Française*.

ON THE OPHTHALMIA IN THE BELGIAN ARMY.

M. *Caffe* was appointed in 1838 by the minister of commerce to visit Belgium, Holland, and Prussia, with the view of examining, on the spot, the epidemic ophthalmia which for many years past has affected the troops of the Belgian army. This ophthalmia was first noticed, at least as an epidemic, in 1814; but it has been more particularly since 1830, after the movements of the last revolution, that it has prevailed with great severity, and to such an extent that it has usually attacked at least one-eighth of the entire army, and in some regiments nearly one-half of the soldiers. Upwards of a hundred thousand persons in Belgium have suffered from it since its first invasion; and an immense number of these have in consequence totally lost their sight.

The Belgian Government appointed a permanent committee, composed of their most distinguished surgeons and physicians, and authorised them to invite, at the national expense, some of the eminent oculists of Vienna and Berlin to investigate the cause of this wide-spread pestilence, and to consult as to the best means of arresting it. But it would seem that not much success has resulted from their enquiries; for in 1838 there were still 5000 ophthalmic patients in an army of not more than 50,000 men. A great number of the soldiers were blind, and there were no signs of a cessation of the epidemic.

The characteristic symptoms of this ophthalmia may be briefly described to be an extreme vascularity, tumefaction and softening of the conjunctiva, the development of granulations on the folds of this membrane, and the secretion of a fluid, at first serous, then muco-purulent, and lastly entirely purulent. When the disease is severe, the tumefied eyelids become of a purplish red colour, the purulent discharge is immense, a pulpy whitish spot is observed at one point of the cornea, which at length gives way, either from ulceration or gangrene; and then the humours of the eyeball escape and the sight is irrecoverably lost. In less severe cases the entire thickness of the cornea is not affected; but even then the sight is perhaps left almost wholly interrupted, in consequence of an extensive and permanent opacity. In other cases again—and these seem to be most common at present—the ophthalmia is chronic from its commencement, or becomes so after a very short acute stage; the conjunctiva remains injected and swollen, the granulations continue, the discharge is less copious and of a muco-serous character, and the cornea becomes nebulous: this state may last for a considerable length of time.

M. Caffé is himself quite satisfied that the Belgian ophthalmia is truly contagious, and communicable from one person to another, not only by the direct application of the discharge, but also through the medium of the atmosphere by some infectious miasm.

Indeed no one can possibly doubt that the disease may be communicated by the inoculation of the purulent matter on a healthy eye: the proofs are too obvious and decisive. But it is certainly more difficult to establish the miasmatic infectiousness of the disease; M. Caffé however feels equally satisfied upon this point also.

The contagious character of the epidemic does not exclude the idea of its spontaneous development; although, it must be confessed, the actual cause or causes of the disease have hitherto escaped detection. Some writers indeed have imagined that it has been imported from Prussia or Egypt; but this seems quite fanciful.

It is worthy of remark that the history of the *blennophthalmia*, which exists almost permanently in the Foundling Hospital and in the Orphan Asylum at Paris, confirms in almost every point the opinions of M. Caffé on the nature of the Belgian ophthalmia; there being a very striking resemblance between these two forms of the disease.

M. Caffé had in 1832 observed a similar epidemic at the temporary hospital of Bona-hommes, where upwards of a hundred children were crowded together during the prevalence of the cholera;—a purulent ophthalmia made its appearance among them, and several of the nurses and one or two of the medical attendants caught the disease. There had been no ophthalmia in the hospital before.

As to the *treatment* of the Belgian ophthalmia, it is admitted by all that the severity of the disease is aggravated by the crowding together of many patients in the same ward, and decidedly mitigated by dispersing them. M. Caffé advises that, when the disease makes its appearance in a regiment, the soldiers ought to be bivouacked in the open air, provided the weather be sufficiently warm and dry. It is at least quite necessary to separate at once every man who is even threatened, far less already affected, with this disease. If this

practice were more rigidly executed, M. Caffé is of opinion that the epidemic might be arrested. He had seen almost every remedy tried; he was sorry to confess that no line of treatment seemed to have that influence in arresting the disease, which might warrant him in giving it a decided preference.

M. Baudelocque, in commenting on the observations of M. Caffé, and other preceding speakers, mentioned that, on more than one occasion, he had observed at the Hôpital des Enfants an epidemic purulent ophthalmia seemingly arrested by thinning the number of the children in the wards, and dispersing them in separate rooms. Until this was done, every remedy that was used proved inefficient; but afterwards it was observed to be comparatively easy to treat the disease. It is doubtful indeed whether the purulent ophthalmia in infants and children be decidedly contagious; but at all events it is wise to separate the diseased from the healthy, and keep the latter quite apart. No remedy is on the whole so efficacious as the local application of a solution of the nitrate of silver, not omitting at the same time the application of one or more leeches to the temples, of a blister to the neck, and the internal administration of appropriate medicines.

M. Velpeau confessed that he had not seen the Belgian ophthalmia, but he was strongly impressed with the idea that the same mode of treatment, which was so successful in his practice in the other forms of purulent ophthalmia, would, if rightly pursued, be found most useful in the cure of the disease. He alluded to the use of a strong solution of the nitrate of silver—from half a drachm to a whole drachm of the salt dissolved in an ounce of water. As a matter of course, the employment of other means, constitutional as well as topical, is not to be neglected.—*Gazette Medicale.*

ON THE PURULENT OPHTHALMIA OF CHILDREN.

The following remarks apply to that form of purulent ophthalmia which usually occurs epidemically among children of three or four years of age—a form of the disease which is very different from that which is often observed in infants soon after birth, and which, it is believed, arises from the contact of the acrid mucus of the vagina with the eyes of the infant during the process of delivery.

The former is of frequent occurrence in Paris, and is usually observed during the early months of the year. It is observed not only to attack a number of children at the same time, but also, especially in a hospital, to propagate itself from one patient to another, who may happen to be next to him—thus seeming to be contagious as well as epidemic.

It is one of the most alarming diseases of childhood, in consequence of the extreme rapidity of its progress, and the tendency there is to perforation and consequent destruction of the eye, if the symptoms are not promptly subdued. Occasionally it proves fatal; but such a termination is generally, we believe, attributable rather to the improper treatment which may have been pursued than to the mere severity of the disease itself—unless indeed the child is in an unhealthy state at the time of its seizure.

The following two cases may be aptly quoted here in illustration of this remark.

Case 1.—A child, four years of age, had been suffering with cough and purging for several days before the right eyelid was observed to have become of a purplish-red colour, and to be swollen and quite closed: a purulent matter also kept oozing out in considerable quantity. Leeches were applied to the temples, and emollient washes to the eye. Four days afterwards, the cornea was perceived to be much softened, and to threaten immediate perforation. The left

eyelid also had now become affected in nearly the same manner as the right one had been four days before.

The same line of treatment was unfortunately continued; and both eyes were irretrievably lost.

The constitutional symptoms did not, as is usually the case, abate; and the patient died on the 15th day of the ophthalmia.

Case 2.—Two days before the death of the former child, another child in the same hospital, (Hôpital des Enfants,) and who slept in the adjoining bed, exhibited the early symptoms of a similar ophthalmia. The system at this early period was not much affected. Leeches and emollient applications were used. Ultimately both eyes were destroyed from rupture of the cornea, and the escape of the contents of the balls. In this case, however, the constitutional symptoms abated after this unfortunate event, and the young patient gradually recovered.

The mode of commencement of this formidable disease is usually insidious: there being little or no fever present at first, and the eyelids only seeming to be the parts affected. These acquire a deep-red or purplish hue, and become puffy, swollen, and closed. There soon follows a copious oozing out of a thick mucous matter, which seems to be secreted almost as quickly as it is removed, and there is also an abundant flow of tears, whenever the lids are separated. Still there is neither much pain nor heat in the parts, until the second or third day, when the eyeball itself usually becomes involved, (if the disease has not been arrested,) and the constitutional symptoms are aggravated. Soon after this period, in unfortunate cases, the cornea bursts, the contents of the eyeball escape, and the eye is then irretrievably gone.

It is rare that both eyes are affected from the first at the same time; although it is very common to observe one eye to be attacked with the disease in a few days after the other.

As we have already remarked, the destructive effects of this formidable disease are, in not a few instances at least, referrible to the erroneous line of treatment which is too frequently pursued. It is not by the use of antiphlogistic and emollient remedies that we can hope to arrest or counteract its rapid and disorganizing progress. Indeed whatever has the effect of debilitating the system seems to favour, rather than to arrest, the tendency to rupture of the cornea and the consequent destruction of the eye.

Instead therefore of bleeding and other powerfully depressing measures, the employment of gastric evacuates, and especially of emetics, is greatly to be preferred. The action of vomiting is not merely to cleanse the stomach and prime *vis* of all offending matters, but also to cause a powerfully derivative action from any suffering organ to the skin, and thus determine an equable flow of blood to the entire surface of the body.

After the free operation of an emetic, which should be repeated at short intervals in some cases, a blister should be applied to the nape of the neck or to one of the arms, with the view of diverting the incipient morbid action from the eyes. A large dose of calomel may also at the same time be given; and this should be repeated at short intervals, either alone or in combination with jalap or some other purgative, so as to cause copious evacuations from the bowels. When once this is effected, the diet allowed may be generous or even stimulating, and a moderate quantity of wine may also be allowed.

As to the local treatment of the purulent ophthalmia of children, we have already observed that the use of antiphlogistic and relaxing remedies is decidedly hurtful. Not but that if symptoms, local or general, of active inflammatory action be present in a case, as occasionally happens, it may be necessary to have recourse to smart antiphlogistic measures; but such a case is of exceptional and not of frequent occurrence. But under no circumstances is it prudent

to continue the use of such a practice for any length of time; all that is requisite is to remove the active symptoms; and when this is effected, no time should be lost in resorting to some powerful topical application directly to the eye. Perhaps on the whole the most useful of all is a strong solution of the nitrate of silver, 3ss.—3j. to an ounce of rose water, of which a few drops are to be introduced between the lids, three or four times a day. Some surgeons recommend highly a solution of one grain of corrosive sublimate in eight ounces of distilled water as an eye-wash to be frequently applied; while others prefer a strong opiate collyrium, prepared by dissolving two scruples or a drachm of opium in a pint of tepid water. But none is on the whole so generally useful and so decidedly potent as the solution of the nitrate of silver. By the judicious use of this means, aided with the employment of calomel and emetics and the application of one or two blisters to the neck, a cure will often be effected in two, three, or four days.—*Bulletin General de Therapeutique.*

M. LISFRANC ON CERTAIN FALLACIES IN SURGICAL WORKS.

From a lecture recently delivered by this celebrated surgeon at the Hôpital de la Pitié, the following extracts on some of the more common errors which are found in surgical books are worth perusal.

Facility of Diagnosis in general.

"Whatever may be told you in other places to the contrary, I can positively assure you that the diagnosis of diseases is by no means, generally speaking, so very difficult. Lecturers and writers are too apt to frighten you by representing it as encompassed with difficulties which are only to be overcome with much study and erudition. Do not believe such statements; diagnosis is on the whole tolerably easy; the nurses and other attendants in our hospital, although ignorant of scientific particulars, generally form a very shrewd guess of the malady with which each patient on their admission is affected, and can tell you when you arrive to examine them: it is rare for their judgement to be wrong."

This is all very true; but M. Lisfranc knows very well that nurses may indeed be clever guessers in a rough way, but that it would not be very safe to found any line of treatment on their diagnosis. We must not however deny that an experienced nurse is often more likely to be right than a mere book-doctor:—practice is every thing.

Difficulty of Diagnosis in certain Cases.

"Nevertheless there are cases, in which the obscurity of the diagnosis is so great that it is almost impossible to dissipate it. Yet if you open some works, you are told that every thing is simple. For example; Is there a chronic swelling of the testicle? they will tell you that it is quite easy to determine whether the swelling be of a scrofulous, scirrhus, syphilitic, or tubercular nature. But when you come to study the reality in the hospital, you then discover the fallacy of these scientific romances, written in the silence of the study and away from the spectacle of suffering humanity. You are astonished not to find that multitude of varieties or species of a disease which are described, and with great minuteness too, in the standard works of the day. Thus we read of 30 or 40 different varieties of ophthalmia, as if it was possible for any man to discriminate a sixth part of them. But to return for a few minutes to the subject of tumors, we may mention that no surgeon was more cautious in pronouncing on the nature of many morbid swellings than the late Baron Dupuytren. I remember a case in point: a patient had a large tumor situated at the inner angle of the right eye, and which alternately enlarged and diminished with the

movements of respiration : it also became fuller by heat, and smaller by cold and by compression, recovering its original size whenever the pressure was removed. The case had been seen by a multitude of surgeons, who all gave some opinion or other ; the general impression was, that the tumor was of an erectile tissue. *Dupuytren* alone confessed that ' he could make nothing of it.' An operation was performed ; and it was then discovered that the swelling was caused by a large varix of the nasal vein resting upon a fatty tumour. Let me mention another instance where the diagnosis was very obscure and difficult.

A lady had suffered for twelve or fourteen years from pain and distress at the posterior part of the pelvis. Within the last few months a swelling had made its appearance there. She had been treated at different times for neuralgia, rheumatism, inflammation of the periosteum, &c. &c. At length she came to Paris to consult the leading surgeons of the metropolis. Some decided that there was a chronic abscess, connected perhaps with disease of the bone. An explorative puncture was made ; and no sooner was the trocar withdrawn than a stream of blood sprung out with such force as almost to reach the ceiling of the room. Immediately after the operation, distinct pulsatory movements were felt, and a blowing sound was audible over the tumor, although previously there had not been a trace of either symptom.

These two cases will be sufficient to shew you how necessary it is to be cautious as to your diagnosis in certain obscure cases."—*Gazette Medicale*.

ON MEDICAL METEOROLOGY.

It is a principle of medical philosophy, founded upon the experience of successive centuries, that there exist certain relations of causality and dependence between the physical characters of the seasons and the nature of the prevalent and endemic diseases.

Each season having a peculiar and individual nature determines in the animal economy a peculiar set of movements, and leaves certain impressions, which are the more decided and the more durable just in proportion as its action is exercised with greater energy and for a greater length of time.

The succeeding season comes in its turn to impress on living bodies a different series of movements ; and these again give way to another series when the year has advanced two or three months. This principle of concordance of the seasons with what have been called the smaller epidemics—a principle so rich in clinical applications, so useful in assisting the physician in the diagnosis and in tracing the causes of many diseases, and so instructive in enabling us to discover their genuine nature and the rational and successful method of their treatment—had been already well laid down and illustrated in the writings of Hippocrates. In his treatise on air, waters and places, we read the following passage.

" Astronomy itself contributes not a little, but a very great deal, to the healing art ; for it is well known that, along with the seasons of the year, the human body undergoes remarkable changes."

At various times the truth of this principle has been recognised and enforced ; at other times it has been quite overlooked and neglected : but this has been more especially the case during the last fifty years. Medical men have in all ages been apt to carry certain doctrines to excess ; hence what has been praised and exalted in one age has been too often been despised and utterly rejected in another. So apt we are in avoiding one error to fall into the very opposite one. *Luther*, with his usual fire, has very happily expressed this tendency of the human mind by comparing it to a drunken man on horseback ; when he is lifted up on one side, he is apt to fall off from the other.

In the manuscript work " On the Diseases of France in their relations with

the seasons of the year, or the medical and meteorological history of France," which Dr. *Fuster* recently communicated to the Royal Academy, we find the first serious attempt that has made for a long time to follow out the Hippocratic doctrine.

"The physical qualities, and, at the head of these, the temperature of the atmosphere, play the first and the most important part in the pathogenic influence of the seasons. In considering the question of aerial temperature, it is necessary to distinguish the absolute heat as indicated by the thermometer from the sensible heat as experienced by our feelings; for the effect of the one is by no means always proportionate to that of the other. Various considerations, derived on the one hand from meteorology and on the other from physiology, will account for such differences. Thus, quite independently of any variation of the absolute temperature, the atmospheric electricity, its dryness or moisture, its calmness or its disturbance with winds, and the state of the cutaneous perspiration as well as that of the nervous system of the individual, will be found to modify exceedingly the sensible heat of the air. . . . It is especially on the association of the temperature with other conditions, such as the climate, the soil and its productions, the winds and waters, the light, electricity and magnetism, that the prevailing diseases of the different seasons depend."

There is seldom however any abrupt transition from one season to another, but rather a gradual and often imperceptible fusion of the characters of each, so that it is scarcely possible to affirm when one ceases and the other begins; and hence the medical constitution, so to speak, of the atmosphere at the period of meeting partakes of the characters of both. There is thus produced a mixed or complex pathological condition which results from the concurrence of the action of the season which is closing and of the action of that which is commencing. The experienced and skilful physician will not neglect the influence of such agencies in the treatment of many diseases; and thus his practice is not a little modified at one time from what it is at another in the management of the same malady.

"In Spring,—the weather of which is usually characterised by atmospheric vicissitudes of all sorts, partaking of the cold of Winter at its commencement and of the heat of Summer at its close,—the prevailing diseases are catarrhal and inflammatory in the first period, and catarrhal and bilious in the second. The organs of respiration and of digestion are those which are chiefly affected.

In Summer the increase of temperature causes a predominance of bilious affections. Nevertheless, as the Summer weather in France is usually very variable, partaking more or less of the characters of Spring and of those of Autumn, the bilious complaints almost always exhibit the features of a phlogistic or of a mucous diathesis. The gastric, hepatic, and intestinal systems are more particularly affected.

In Autumn, the recurrence of atmospheric varieties brings back the tendency to catarrhal affections as in Spring. There is however this great difference, that in Spring the catarrhs are usually associated with inflammatory affections, whereas, in Autumn, they are associated with bilious complaints; the alimentary organs being those which are most apt to be disordered.

During Winter inflammatory diseases are the most prevalent, and these are usually combined with catarrhal and other mucous affections. The sanguiferous system and still more the mucous system of the whole organism are those which are most compromised during this season."

Besides the decided influence which the characters of the different seasons exert on the nature of the prevailing diseases, it cannot be doubted that even accidental or sporadic diseases are modified more or less according to the season during which they occur. Thus a pneumonia occurring during Summer is apt to exhibit the impress, so to speak, of a bilious constitution. The symptoms indicate such a modification, and the treatment requires to be managed accordingly.

"This influence of the meteorologico-medical constitution of the weather is appreciable even on external diseases, wounds, and operations. *Dessault* and *Bichat* paid much attention to this subject; and the rich collection of the memoirs of the old Academy of Surgery furnishes numerous examples of allusion to it."

But not only do the different seasons of the year exert a decided influence upon the general characters of prevailing diseases, but even the various periods of a single day appear to have a somewhat analogous effect. It was a favourite doctrine of Hippocrates, that there was a strict relation between the action of the diurnal revolution and that of the annual revolution of the sun on the production and the progress of diseases; *sicut in anno continentur periodi aegritudinum, eodem modo und die*. The morning was the analogue of the Spring, the noon was the analogue of Summer, the evening represented Autumn, and night corresponded with the Winter. The year was thus considered only a lengthened day, and each day a year excessively contracted. Many of our medical classics, who have belonged to the Hippocratic school of medicine, have confirmed and illustrated these views of the old Coan by numerous observations: we may mention the names of *Sydenham*, *Triller*, *Baillou*, *Ramazzini*, and *Huxham*, as among the most distinguished writers of this school. The most important of their conclusions are these:—

"Various diseases exhibit certain features of change during the day and during the night; patients too, in their turn, have their feelings affected differently in a similar manner; and physicians have remarked that, even at different periods of a single diurnal epoch—that is to say in the time between the rising and setting of the sun—diseases often exhibit diverse phenomena.

Thus inflammatory diseases, those which are characterised by an exaltation of the vital forces, undergo usually towards morning their chief exacerbations: at the same period too their inversion most frequently takes place.

Catarrhal and mucous fevers, which are generally characterised by the slowness of their movements and the atony which accompanies them, commence most frequently, and also become most exasperated, on the approach of night.

Bilious fevers, which seem to occupy a place between inflammatory and mucous diseases, have their paroxysms as well as their most frequent invasion about noon.

The period of the paroxysms approaches to either the morning or the evening, according as the prevailing diathesis is of a sthenic or of an asthenic character.

It is during the day that by far the greatest number of accessions and paroxysms of intermittent fevers occur. On the other hand, the exacerbations of hectic fever usually occur in the evening and during the night: the sweats take place almost exclusively towards the morning.

Ramazzini, in his account of the epidemic constitution of 1690, describes an ataxic remittent fever, of which all the symptoms became greatly aggravated on the approach of sunset. The patients were alarmingly ill during the whole night; but from the first appearance of the sun, all the bad symptoms ceased, and the patients could rise and walk about, *velut angues ad solem, cutem curantes, erecti*—to use the expressions of the writer.

Huxham too, in his beautiful treatise on malignant angina, remarks that this disease, during its entire progress, presented exacerbations during the evening; and that, even when the patients were tranquil and comfortable during the day, the symptoms always became aggravated in the evening.

We may here, with advantage, allude to a curious approximation, that has recently occurred to our minds, between the facts now mentioned and the beautiful discovery of *M. Daguerre*.

According to the observations of this gentleman, the hours in the morning and in the evening, equidistant from noon and corresponding, therefore, to the

same amount of elevation of the sun above the horizon, are not, however, equally favourable for the production of photographic images. He has found that at all seasons of the year, in circumstances of the atmosphere apparently exactly similar, the image is formed a little more quickly at seven o'clock in the morning, for example, than at five o'clock in the afternoon, at eight a.m. than at four p.m. and at nine a.m. than at three p.m.

Now, if such be the case with the action of light on dead matter, there may be something analogous to it in its influence on living bodies both in disease and in health. The human frame, it is well known, is more sensitive than the most delicate instruments that can be made: why then may it not be acted upon in some peculiar way by the ever-varying conditions of the light and heat of the sun? It is, therefore, quite possible that the discovery of M. *Daguerre* may give rise to the discovery of many phenomena in physiological and medical science.

The great fact of the diurnal movements is seen not only in some acts of human life; but also in many phenomena observed among the lower animals. But the same law does not apply to all, or give rise to uniform results: for the influence of light and heat is often manifested in a manner that is different and even quite opposite, not only in individuals, but even in tribes both of the animal and of the vegetable kingdom. There are some nocturnal species of animals among mammals, birds, reptiles, and insects.

The same phenomenon of diurnal movements is observed in several functions of vegetable life. Every one has heard of the sleep of plants, *Flora's clock*, &c. &c. *Draparnaud* has observed that at the end of Autumn, when the weather begins to become cool, the flowers of the *ipomoea violacea*, and of several species of *mirabilis*, which are usually night-blowing flowers, open at this period of the year during the day also.

Analogous diurnal movements have been observed in various phenomena of meteorology; as, for example, in the indications of the compass and the barometer. It is at the hottest hours of the day that hail is generated most abundantly, and in Europe it almost always falls during the day.

It is probably by following out such analogies as these, in bringing them together, and in comparing them, that we may hope to discover the laws which these phenomena obey, and the general causes which give rise to them.—*Gazette Medicale*.

FATAL EFFECTS FROM THE USE OF COLCHICUM AND OF TARTRATE OF ANTIMONY.

Case 1.—A middle-aged woman, whose health previously was very good, was seized, in the Spring of 1839, with acute rheumatism. She was bled, and the following prescription ordered:—

℞. Tinct. vinos. colchici ℥i.
 Infusi chamomill. ℥iv.
 Aq. laur. ceris. ℥i.
 Syrupi simpl. ℥i. M.

A spoonful to be taken every two hours.

The medicine produced at first severe vomitings and purgings, which weakened the patient's strength so much, that the third day she refused to continue its use. After nearly a month's omission, its use was resumed; but again it excited great gastric and intestinal disturbance, although a spoonful was taken only thrice a day.

The vomiting became now unusually violent and distressing, and continued so even after the use of the medicine was omitted. This unpleasant symptom

became again aggravated by the colchicum having been on one occasion administered in an enema, and at last it was so obstinate that it resisted every means used to check it, such as leeches and anodyne poultices to the stomach, Seltzer water, Riviere potion, aerophorous powder, magnesia, opiates, ice, antimonial plaster, blister, endermic use of morphia, mercurial opiate frictions, &c. &c.*

All proved ineffectual; and the extreme irritability of the stomach seemed to be only aggravated by every thing that was put into it.

"It was no longer a question of rheumatism, but of increasing debility and inanition from the obstinate vomiting and purging which continued. It is true that from the 5th of April—(the first dose of colchicum was administered on the 15th of February preceding)—I had tried every means to support the patient's strength with enemata of beef-tea, and with gelatinous baths. (1) Towards the end of April the vomitings, which returned irregularly once or twice a day, became of a brown colour, and sometimes bloody; and to the state of constipation, which had existed for some time, succeeded a diarrhoea which resisted every means to check it. On the 14th of next month—three months and a half after the commencement and of her illness, and about two months after the administration the second time of the colchicum—the patient died.

Dissection.—The stomach only was permitted to be examined. The only morbid appearance found in it was a large patch of inflammation to the extent of four inches at the great extremity of the viscus: the mucous membrane at this part was red, injected, slightly swollen, and somewhat softer than the rest. But altogether the existing lesion was less considerable than what is often met with in the stomach in cases where its functions had not been disturbed."

Dr. Forget, the Professor of Clinical Medicine at Montpellier, and in whose practice the preceding case occurred, candidly acknowledges that the *colchicum* was the *point de depart* of the fatal symptoms. He seems to be astonished that the distressing accident should have occurred, seeing that he has long been in the habit of giving the colchicum in such doses as to induce severe vomiting and catharsis,† and that these symptoms have always subsided on the suspension of the medicine.

Remarks.—It certainly appears to us that the treatment in the preceding case was most injudicious. What possibly should induce a physician to persevere in the use of any medicine when it produces such distressing effects as the colchicum did from the very commencement of its administration in this case of Professor Forget? Not to allude to the immoderate doses in which it was at first administered—nearly a drachm of the vinous tincture every two hours—there are surely other medicines and other modes of treatment suited for the cure of rheumatism, which a prudent practitioner would resort to if he found that col-

* No mention is here made of two of the most powerful remedies for allaying the irritability of the stomach—hydrocyanic acid, and creosote. It is unnecessary to suggest these to the British practitioner, as every one is in the habit of using them for such a purpose; our only motive being to allude to the apparent want of practical skill in some of the best foreign physicians. There are two other means which we have often found of decided efficacy in subduing extreme irritability of stomach, which it may be worth while to mention—viz. the entire abstinence from every thing, food as well as medicine; and the use of enemata, so as to induce an action of the stomach and bowels *downwards*.—(Rev.)

† He mentions that he has known it cause fifty evacuations a day, when not more than three table-spoonfuls of the prescription—which we have given above—have been taken in four and twenty hours. A pretty good specimen of heroic treatment!

chicum decidedly disagreed with his patient. There is that strong predilection in so many French practitioners to carry every line of practice and every remedy *a l'outrance*; as if the object of our art was rather to be continually making experiments on patients than to cure them of their diseases. We must candidly confess that the more acquainted that we have become with the results of French practice, as recorded in their own journals, the more we are convinced that not a few of the inmates of their hospitals are sent to their long accounts by the heroic practice which they are made to pass through, and who might in all probability have recovered, had some homœopathic doctor had the charge of them—in other words, had nothing at all been done.—(Rev)

Case 2.—Death from an overdose of Emetic Tartar.

A man, 28 years of age, was admitted into the hospital at Strasbourg, with troublesome cough, attended with sharp pain in the chest and occasional hæmoptysis. The diagnosis of the case at the time was "general bronchitis, chronic induration of the left lung, probably with tubercles and even cavernous excavations, disguised by the quantity of mucus present." A blister to be applied to the left arm, a grain of opium at bed-time, and a mixture containing tincture of digitalis were ordered. Subsequently the acetate of lead—in doses of, at first, a grain, and subsequently of six grains daily—was given.

"As the bronchial discharge, however, continued unchecked, and the patient's strength was greatly reduced, we took the resolution to try a remedy which in some analogous cases had produced decidedly good effects—we mean the tartar of antimony in a full dose. We had in view the bronchorrhœa; and as to the supposed tubercles, (the existence of which formed in our opinion a contra-indication) we allowed ourselves to be influenced by the advice of *Hufeland*, who recommends, in cases of mucous phthisis with obstruction of the air-tubes, the use of emetics. We therefore ordered our patient a six ounce mixture, containing six grains of emetic tartar and two drachms of syrup of poppies: a spoonful to be given every hour."

The medicine, we are told, produced vomiting only twice, and purging three times; but the effects on the poor patient were most disastrous. On visiting him next day, his pulse was scarcely perceptible, his extremities were cold and pale, and his looks vacant. Two hours after the visit, he expired.

Dr. *Forget*, in his comments on this case, repeats the same remark that he made in reference to the former case—viz. that he had frequently administered the antimonial in as large doses without its causing any unpleasant effects. "Besides," says he, "there was neither excessive vomiting nor purging in the present case, nor asphyxia, nor in short any thing which could account for the death by the ordinary mechanism." In his anxiety to give some plausible explanation of the unhappy accident, Dr. *Forget* bethinks himself of *un genre de mort*, hitherto not well understood by medical men, and the cause for which was first clearly explained by M. *Bouillaud* to consist in the formation of coagula within the cavities of the heart during life. Now, in the present case, both ventricles and auricles were, he says, found on dissection to be filled with coagula, which extended some way along the great vessels, and were also intimately enmeshed in the *columnæ carneæ*. "The *stasis* or retardation of the blood caused by the nausea and depression from the action of the antimonial, increased, no doubt, the tendency which existed to the deposition of coagula within the heart's cavities."

Remarks.—It is almost unnecessary to append a single word in the way of comment, or rather of entire condemnation, on the practice pursued in this case: it was altogether unwarrantable.

A prudent practitioner would hesitate before giving even moderate doses of tartar of antimony to a patient exhausted by pulmonary disease; and certainly he would never think of administering this rather unmanageable medicine in

heroic doses. We have no wish to press M. Forget too far, and we shall therefore close these few words, with the following very judicious remarks from his own pen.

"Such unfortunate cases as the present should have the effect of teaching medical men to proceed with caution, and to examine minutely the morbid individualities before having recourse to medicines *heroiques pour guerir, heroiques aussi pour causer la mort*. Moreover they speak loudly in favour of more gentle and simple remedies which, although they act slowly, can never expose the physician to the remorse of having committed an involuntary homicide." (!)

Such are the very expressions of Professor Forget himself: we may leave them therefore without further comment.—*Bulletin de Therapeutique*.

MEMORANDA ON INSANITY.

The following summary of the pathology and treatment of insanity is from the pen of an experienced physician, M. Botter, an inspector of lunatic asylums in the South of France. It is clear and succinct, and conveys a good idea of the opinions of one who has seen much of the disease which he professes to describe.

1. Mental alienation, like all other diseases, is the result of a lesion of the organism. The affected organ is the brain—sympathetically at first, but essentially so if the disease continues.

2. The nature of the lesion varies according to the character or form of the existing insanity:—for under this *generic* term, diseases, which have little or no relation to each other, except in the disturbance of the intellectual faculties and which are fundamentally different, have been classed and grouped together.

Thus *idiocy* and *imbecility*, which result from an imperfection of the brain, congenital or acquired, are not, properly speaking, diseases, and require no medical treatment.

Mania, which is characterised by a general delirium with excess of action, is produced by an irritation of the outer surface of the brain and of its membranes, in a more or less considerable extent: if this irritation or inflammation does not terminate in resolution, it gives rise to certain organic changes, which induce *dementia* or mental alienation—a state of the disease which is little susceptible of cure. *Dementia* is therefore *mania* become incurable.

Mania and *dementia* are often complicated with a paralysis of a greater or less number of the muscles of animal life: this form of paralysis is generally fatal, and seems to arise from a softening of the cortical matter of the brain.

4. *Monomania*, accompanied with excess of action, is produced by a very circumscribed irritation of a portion of the brain and of its membranes. When it is accompanied with depression and melancholy, there is probably neither irritation nor inflammation of any portion of the brain, but only a habit on the part of the invalid of associating incoherent ideas. (This is certainly not very satisfactory nor indeed is it quite intelligible). Perhaps indeed there exists in such cases, much more frequently than is imagined, a chronic lesion of the tri-splanchnic nerve, whose disturbed functions may re-act on those of the brain.

5. It is evident that the rational treatment of the various forms of insanity must be based on a knowledge of the pathological conditions of the nervous system with which they are associated. To be satisfied with merely attacking secondary and sympathetic symptoms would be,—in the words of M. Forget—like trying to put out a great fire, by extinguishing the cinders and hot ashes which are thrown to a distance by the wind, instead of exerting all your efforts to bear upon the centre of the conflagration.

To Pissel we owe a great deal, not only for his having abolished the barbarous

practice of treating the insane rather as criminals who deserve to be punished, than as patients who are labouring under a disease, but also for having exploded the use of a vast number of empirical remedies which, before his time, used to be resorted to. He perhaps carried the *expectant* system of treatment too far, by recommending an almost unlimited reliance upon the curative efforts of nature; but certainly this was better than the opposite practice of leaving nothing at all for her to do. It is always a most valuable precept in our art, *primo non nocere*.

6. The treatment of insanity is either physical or moral. The most important *physical* remedies are bleeding, baths, purgatives, and the use of artificial discharges, and they are chiefly useful in *mania*; whereas the *moral* means—under which head we comprehend cheerful occupation of the mind in gardening, music, and games of chance, the engaging in religious services and ceremonies, and in whatever has a tendency to tranquillise and exhilarate the mind, and withdraw it from its delusions—are most to be trusted to in the various forms of *monomania*.

In reference to the former, or the physical remedies, M. *Bottex* especially recommends the employment of *baths*—not baths “of surprise,” but tepid baths, in which the patients should remain for a length of time. These should be used frequently, and they may be most beneficially combined with the application of cold to the head at the same time.

The purgative which is suited above all others for insane patients is croton oil,—of which a drop or two, blended with honey or syrup and then mixed with any fluid, may be easily given to any patient.

When the disease resists the use of bleeding, baths, and purgatives, M. B. recommends that an issue be at once established,—in the thigh in women whose menstruation is irregular, and in the nape of the neck in all other patients. He prefers an issue made with the caustery or with caustic to a seton, as he is of opinion that the very effort made by the part to throw off the eschar exerts a powerfully derivative influence.

In some cases the use of the antimonial ointment rubbed upon and around the scalp, so as to bring out a crop of pustules, has seemed to effect a cure in cases that had resisted the employment of all other means.

The use of sedative narcotics, as morphia, digitalis, and hydrocyanic acid, is frequently productive of excellent effects. Quinine also, especially in cases where the paroxysms seem to have somewhat of an intermittent character, has been found extremely useful.

Each case, be it remembered, requires some speciality in its treatment; and the adaptation of the remedial means to the varying conditions of different patients is the best test of the physician's discrimination and skill.

All the best writers on insanity insist upon the necessity of the separation of the sufferers from their relatives, and from whatever has the effect of keeping up a remembrance of their former feelings and habits. A change of scene is always beneficial; and hence, whenever there is any promise of convalescence, the physician will do well to recommend travelling.*

* Dr. Esquirol observes: “I have often found that insane patients are greatly tranquillized by travelling, especially when they visit countries whose striking scenery takes hold of their imaginations, and when they are exposed to the little troubles and casualties of common travellers. The very annoyances and inconveniences to which they are exposed have a good effect. Travelling acts beneficially also by exciting the assimilative functions; the appetite, the sleep, and the various secretions become more regular and natural. Besides the chagrin, which is almost always experienced by the sufferer when on his recovery he returns to his home and friends, is much mitigated after a long travel or voyage, the incidents of which furnish so agreeable a topic for conversation.”

So important too is exercise in the open air considered by many, that Dr. Ferres has very justly remarked that a farm or large garden is an indispensable adjunct to every lunatic asylum.—*Gazette Medicale*.

M. BAUDENS ON GLANDULAR SWELLINGS.

M. Baudens, one of the most distinguished military surgeons in France, and who has been the surgeon of the hospital at Lille since he returned from the expedition to Constantine in Africa, where he was the *chirurgien en chef*, prefaces his remarks on the development of glandular engorgements by alluding to the influence of climate on this and other forms of disease.

"Under the cold and humid atmosphere of Lille and of the surrounding country, the energy of the exhalant vessels seems to be quite paralysed, while at the same time the absorbents of the surface, being kept as it were in a perpetual bath, are constantly receiving extraneous matters. Hence the retropulsion of the fluids from the surface by a centripetal movement, the abnormal development of the cellular tissue, the tendency to enlargement of the lymphatic glands, the disposition to rickets, phthisis, and scrofulous disease in all its forms, which so widely prevail among the population of Lille."

It seems that the moisture of the atmosphere at Lille is, as appears from the hygrometer, at least as great again as that at Paris.

M. Baudens alludes to the damp state of the houses, the neglect of flannel clothing, and the insufficiently nutritious diet of the people, as powerful adjuvants in relaxing the general constitution, and predisposing it to the class of maladies above-mentioned. "The Englishman," he adds, "who lives in a cold and foggy climate, braces himself against its hurtful influence with his *roebif*; we should imitate his example."

He attributes much of the disease among the troops to the insufficient allowance of nutritious animal food to the men. Want of due bodily exercise is another reason:—

"The movements of the limbs in active exercises, and the continued occupation of the mind, must very efficiently second the good effects of a more abundant and more animalised nourishment. A proof of this we see in the case of cavalry soldiers, who, in consequence of their more active and energetic employments, are much less frequently on the sick-list with glandular complaints than the infantry soldiers."

The influence of the seasons on the development of this class of diseases is also great.

"Tolerably rare during the three Summer months, they re-appear with the fogs, cold, and dampness of Autumn; but it is chiefly during Winter that they increase with such a prodigality that we have often counted nearly 80 patients in our military hospital, which usually contains only 300 sick, affected with inflammatory glandular enlargements (*adenites*)."

The groupes of glands most frequently inflamed are the cervical and maxillary: occasionally the testicle has been similarly affected at the same time; and in not a few cases this gland has begun to swell and become painful as the lymphatic glands began to subside; while in others the orchitis was primary and the affection of the cervical glands was secondary. The management of these varieties of the disease is sufficiently easy during the early stage: the use of antiphlogistics, purgatives, and sudorifics, generally suffices to remove all such inflammatory swellings. The difficulty consists in effecting a resolution of the glandular tumors, when they have become fairly chronic.

M. Baudens prefers the use first of blisters over the part to any other local remedy, and then of ioduretted mercurial embrocations. Compression is often

a most valuable adjuvant. The following *novel method* of applying this in swellings of the testicle has succeeded in the practice of M. *Baudens*.

"I had the gland inclosed in a bottle of caoutchouc, which by its elasticity kept up so steady and methodic a compression that at the end of a month's use I had the gratification of seeing a radical cure of the enlarged testicle—which had been diseased for two years, and which would certainly have been extirpated if it had not been that the inguinal glands were seriously affected at the same time."

M. *Baudens* mentions favourably the hydrochlorate of barytes and the preparations of iodine, as useful remedies for internal administration. A generous diet should be allowed at the same time. Whatever tends to fortify the general system, and to give tone and energy to the blood-vessels, will be found to promote the success of our remedial treatment. It is often of marked service in obstinate cases to recur to the application of blisters, often omitting their employment for some time.—*La Lançette Française*.

ON THE TREATMENT OF CERTAIN CASES OF DEAFNESS.

M. *Petrequin*, surgeon of the Hôtel Dieu at Lyons, has communicated to the French Medical Gazette a lengthened paper on those cases of deafness which are connected with, and not unfrequently induced by, affections of the throat and nostrils. He first discusses the use of the different parts of the ear;—take, for example, what he says of the uses of the Eustachian tube.

"It serves as an excretory canal for the fluid secreted within the tympanum, which would otherwise accumulate and interrupt the sense of hearing, (as is the case when the tube becomes obstructed from disease); hence this office justifies its appellation of aqueduct of Eustachius.

2. It serves to establish a uniform degree of heat in the air contained in the tympanum, and thus prevents the disturbance of the functions of the component parts of this cavity.

3. It serves to maintain in this air its proper hygrometric condition.

4. Its principal use is to keep the air in the tympanum in a state of equilibrium with the external air, so that its membrane may vibrate accurately, and communicate the impulses of the air on each vibratory movement.

It is well known that a common drum, in order that it may give out a proper sound when played on, must have an opening in its side to give entrance and exit to the air; so it is with the drum of the ear; if the Eustachian tube be obstructed, the membrana tympani ceases to vibrate with the impulses of sound, and thus the sense of hearing becomes more or less entirely obscured.

The circumstance too of many deaf people hearing better when their mouth is open may be accounted for by the readier admission which is thus given to the air, along the Eustachian tube, and also by the slight enlargement of the outer auditory passage, in consequence of the motion of the condyles of the jaw.

Again; it is from the admission of too large a quantity of air along the tube in the acts of yawning and sneezing that sometimes occasions a momentary deafness and sense of tickling in the ear; whereas, after very loud sounds, such as from the explosion of fire-arms, we not unfrequently experience a tickling in the throat and mouth—in consequence of the air within the tympanum being driven outwards with unusual force. Hence cannoneers are often in the habit of keeping their mouths open while firing off artillery.

From all these circumstances it may be readily understood how any morbid affections of the tympanum and of the Eustachian tube must necessarily interfere with the sense of hearing. Now the Eustachian tube very generally suffers

in all chronic diseases of the pharynx and throat; and hence the importance of examining the fauces in all cases of deafness."

M. *Petrequin* details the particulars of numerous cases where the deafness had been preceded or was attended by some chronic inflammation of the throat, and in which a cure was effected by the use of alum gargles, of insufflations of a powder consisting of equal parts of alum and sugar twice a day, and occasionally by rubbing the fauces with a stick of alum.

The deafness, arising from an obstructed state of the Eustachian tube, may generally be suspected whenever it has followed upon any affection of the throat. It is most commonly met with in persons who are subject to catarrh, cynanche, and coryza; also in those who have suffered from syphilitic, dartrous, or rheumatic complaints. The affection of the tube is necessarily much more obstinate than that of the throat, and it often exists quite unsuspected. The deafness caused by it usually varies in degree according to the state of the weather and the season of the year, being always greater when the air is cold and moist, and less decided when it is dry and warm. A fit of sneezing or of yawning too will often relieve the deafness more or less, for a short time, the patient experiencing at the moment a sensation as if a bottle was uncorked in his throat: this may be caused by the expulsion of some firm mucus plugging up the tube. This kind of deafness is always much increased, if coryza or any form of cynanche is present; and lastly, we may add that, "if during a strong expiration, while the mouth and nostrils are closed, the person is not sensible of the air passing along the tube and distending the tympanum, we have good grounds for suspecting that the former is obstructed."

Deafness from this cause is not unfrequent in youth and in middle age; perhaps however it is still more common in old people, as it is well known that in them few of the mucous passages are quite exempt from some morbid change.

In cases which resist the treatment recommended above, the catheterism of the Eustachian tube should be practised at the same time: this operation is far from being so difficult as many writers have imagined. But very generally M. *Petrequin* has succeeded with the use of the alum, in the form of gargle, and of dry insufflations to the back of the throat. The gargle should be used frequently in the course of the day, and be retained in the mouth for a considerable length of time, so that the alum may affect the mucous membrane, and its operation be gradually communicated towards the opening of the posterior fauces. The insufflation of the dry powder, consisting of equal parts of pulverised alum and sugar, should be employed twice a day; and to render its operation still more effectual, it will be found very useful to rub gently with a stick of alum the tonsils, velum, and fauces, every three or four days.

Under the influence of these several means the engorgement of the throat gradually subsides, and a more healthy action of the mucous membrane is established.

"Experience has already testified in favour of the aluminous medication; MM. *Pommier* and *Bretonneau* have recommended it strongly in cases of diptherite, M. *Bennati* in various affections of the vocal organs, M. *Velpeau* in diseases of the throat, and I myself have used it with great success in many forms of ophthalmia."—*Gazette Medicale*.

Remarks.—M. *Petrequin* is quite correct in ascribing numerous cases of deafness to affections of the Eustachian tube, and in stating that these affections are very often primarily attributable to a chronic inflammation of the fauces, which has gradually extended itself upwards to the posterior nostrils. An excellent, and a still more potent, substitute for the alum, as recommended by M. *Petrequin*, is the nitrate of silver. This is to be used in the form of solution, and the posterior fauces should be freely wetted with it, every three or four days, by means

of a sponge fastened to a probang. A gargle, containing the hydriodate of potash, has also in several cases been used with decidedly good effects.

The internal administration of the same salt, along with sarsaparilla, may be most advantageously combined with the employment of local means, when the constitution is decidedly scrofulous, or suffering from the effects of the syphilitic disease.—*Rev.*

REMARKS OF A GERMAN ON ENGLISH OBSTETRICS.

"In general the English physicians are much less disposed than their brethren on the Continent to perform operations, and trust more on all occasions to the efforts of nature. This will appear when I mention that *Clarke*, during the seven years that he was accoucheur at the Dublin Institution, states that in 63 cases only out of 10,199 deliveries was the employment of any instruments resorted to, and that *Collins*, the late master of the same extensive charity, had recourse to them only 145 times in 16,654 cases. This unwillingness to employ any forcible means, unless peremptorily required, arises no doubt from the slight importance attached by the English to the life of the infant compared with that of the mother. Hence the frequency with which embryotomy is performed, and the comparative rarity of the use of the forceps; and, as to the Cæsarian operation, that is never thought of, except where the child cannot be extracted even after the head has been perforated. (Strange that it ever should.—*Rev.*)

As to the mortality among the infants, 1121 out of 16,654 were born dead during the mastership of Dr. *Collins*. Of 97 cases in which there was prolapsus of the umbilical cord, 73 of the infants were born dead; the mothers did well in all these cases. Dr. *Clarke*, the predecessor of Dr. *Collins*, has told us that only 17 children out of 66 cases, where there was prolapsus of the cord during labour, were born alive. The mortality among the women seems to be very small; for of 16,414 who were delivered in the institution during Dr. *Collins'* mastership, only 164 died; although during this time there had been an epidemic of puerperal fever.

In cases of uterine hæmorrhage, the English accoucheur relies chiefly on a speedy extraction of the placenta after the child has been delivered: in usual, the placenta is never allowed to remain longer than one hour after the accouchement. The employment of firm compression of the hypogastrium, of cold applications or douches, and the introduction of the hand into the cavity of the uterus, are generally resorted to in this form of hæmorrhage. What are considered by far the most potent internal remedies are opium and spirituous drinks, whenever there is any tendency to syncope.

It is only in the last extremity that Mr. Kennedy has recourse to the use of the forceps in the case of puerperal convulsions: he very generally trusts to the efforts of nature. In 15 out of 30 cases of convulsions—and of these 24 were first-labour cases—the delivery was spontaneous; in six it was effected with the aid of the forceps; in eight the perforator was used; and in one only turning was performed. Of the 30 children, 14 only survived. Of the eight women, in whose case embryotomy was performed, five died."—*Neue Zeitschrift für Geburtshunde.*

ON EPIDEMIC HEMERALOPIA.

Dr. *Henry*, surgeon of the French Frigate *Dido*, which has recently returned from its surveying voyage round the world, has communicated some observations on this species of amaurotic blindness, which is not unfrequently met with in

tropical climates. The following extracts are from a report made by him to the Council of Health at Brest.

"A remarkable circumstance occurred during our voyage from St. Domingo to Martinique; it was the epidemic appearance of a complaint of frequent occurrence in the tropics, *hemeralopia*. A few scattered cases had indeed already appeared during the previous part of the voyage; but now a number of our crew became almost suddenly affected with night blindness—in consequence probably of our prolonged stay at sea under the dazzling rays of an equatorial sun."

Dr. Henry applied himself to ascertain the real cause of the complaint. He quite rejects the idea of some, that it is the result of any miasmatic influence, for the *Dido* was and had been for some time at sea; of others, that it is occasioned by imperfect nourishment, as the crew were upon fresh provisions at the time; or by the moisture of the atmosphere, any unwholesomeness of the night air, or by the noxious effect of sleeping in the moonshine (a popular idea). He feels assured himself that the real cause of the blindness is altogether owing to the dazzling effects of the intense solar light reflected from smooth shining objects, such as the sea, tracks of sand, &c. Hence it is more common at L'avalette in Malta and at Cadiz than at Martinique or Guadaloupe, because the two former cities are built upon and surrounded with a sandy coast, whereas the latter have extensive and shady forests all around them.* We cannot therefore hesitate to admit that it is to the intensity of the brilliantly reflected light from the smooth surface of the tropical sea giving rise to an atony of the retina that we are to attribute the sudden appearance of so many cases among the sailors of the *Dido* at the period of her voyage above mentioned. The following remarks on the symptoms of the disease are interesting.

"The symptoms of night blindness are often very indistinct. Generally indeed the pupils are considerably dilated, and lose in a greater or less degree their contractility; sometimes the eye is painful, at other times it is quite free from all uneasiness. . . . We have not observed that this malady is attended, as has been asserted by *Bampfild*, *Dupont*, *Scarpa* and others, with vertigo, headache, redness of the face, or any gastric or intestinal disturbance. In our practice it has presented itself free from all complication, and has almost always been primitive and isolated. The accession of the complaint is usually gradual. At first the sight has become indistinct and obscured by, as it were, a thin veil before the eyes, after the setting of the sun; this indistinctness increases more and more by degrees, and at length terminates in total blindness. I observed that in those patients, in whom the iris was blue or grey, the pupil was always more dilated than in those whose eyes were dark; and moreover that the disease was much more common in the young sailors, who had never been in a tropical climate before, than among the old and seasoned part of the crew."

We need scarcely mention that the complaint is comparatively very rare among the officers of a ship's crew; their duties not exposing them, like the sailors, to the unprotected action of the sun's rays.

As to the *prognosis* in hemeralopia, it is almost always favourable, provided the patient be withdrawn from its exciting cause, and especially if a change be made to some other latitude where the light is less dazzling and overpowering.

"We have observed in between 30 and 40 cases the duration of the complaint has been from eight to fifteen days, which in others the restoration of

* Dr. Henry mentions that almost every one of the unfortunate French prisoners of war, so inhumanly left by the Spaniards on the island of Cabrera (Balears)—where they were badly fed, still worse sheltered, and exposed to the heat of an African sun, on a sandy coast where there was little or no vegetation—became affected with hemeralopia.

healthy vision was much more rapid. As this restoration took place, the contractility of the pupil gradually returned, and the expression of the features lost that dull and unintelligent aspect which it had acquired."

As to the *treatment* of hemeralopia, the protection of the eyes from the brilliant sunshine is an indispensable preliminary, although this alone will not suffice for the removal of the blindness. The application of a blister to the temple or to the nape of the neck is one of the best remedies that can be employed. The use of gentle purgatives should not be neglected at the same time.

Dr. Henry states that, even under favourable circumstances, the employment of ammoniacal vapour, and of other local stimulants alone, did not produce much good.

The fumes arising from boiled liver, so strongly recommended by Dupont and others, did not appear to have any peculiar advantage.

Dr. Henry recommends that the men should be kept as much as possible under the awnings, and when they are exposed to the sun's rays, that they should be made to wear a straw hat with a wider brim than sailors generally use, and which should be covered with some green-coloured lining.—*Gazette Medicale*.

M. GUERIN ON SUBCUTANEOUS WOUNDS.

Every one has heard of the proposal, or rather now the practice, of M. Guerin of Paris, in the treatment of lateral curvatures of the spine—the subcutaneous division of several of the muscles of the back.

From what he recently stated to the Royal Academy, he has met with extraordinary success. "I have, in nearly fifty cases, divided more or less completely most of the muscles of the back and spine—viz. the trapezius, the rhomboideus, angularis scapulae, sacro-lumbaris, and longissimus dorsi. In each of these operations, the wound of the muscle has been from three to four inches in length, and sometimes from one and a half to two and a half inches in depth, when the sacro-lumbaris and longissimus dorsi muscles were completely divided: in those cases where the trapezius and rhomboideus were entirely cut across, the bistoury traversed at least from four to five inches, or more, under the skin.

In almost every one of these cases, no local inflammation nor constitutional feverishness supervened, and by the third day many of the patients were able to rise up and walk about without support. This most pleasing exemption from the accidents which so often follow upon ordinary wounds, is entirely attributable to the circumstance of the air not coming in contact with the freshly-divided surfaces: the tendency to inflammation seems scarcely to exist, and the parts commence and complete the reparative process without interruption or pain."

In addition to a multitude of experiments performed on dogs, M. Guerin has established the perfect innocuousness of subcutaneous wounds in operations for the relief of various forms of distortion. He has divided the sterno and the cleido-mastoid muscles (separately, simultaneously or consecutively) for wry-neck twenty-five times: in every one of these cases—the section having been made under the skin—the wound healed without the smallest trouble. Occasionally the operation was effected with considerable subcutaneous effusion of blood; but this was usually absorbed in twenty-four hours or so, and the reparative process then rapidly took place. Again, the operation of dividing the tendo-Achillis for club-foot he has performed upwards of 200 times; and in all these also he has been equally successful. In the practice of other surgeons, indeed, inflammation and suppuration has followed this simple operation; but

these troublesome consequences are, we suspect, always owing to the outer wound having been made too large, and the air having thereby been permitted to enter.

"That such is the case is surely sufficiently proved by the success which has attended my operations. I have now performed the subcutaneous section of different tendons and muscles in upwards of 500 cases; and in not one instance have any troublesome inflammation of the wound supervened."

The great object, therefore, of the surgeon should be to prevent the entrance of the external air into the wound.

"From all these circumstances," continues M. Guerin, "I infer that subcutaneous wounds so quickly heal in consequence of the exclusion of the external air; and that it is from this fluid (the air) neither physically obstructing the circulation, nor chemically modifying the properties of the blood, nor altering in any degree its vital constitution, as well as from its not exerting any hurtful influence on the nerves and other parts which are protected from it, that the lacerated or divided tissues coalesce and unite by the first intention without any of the usual inflammatory symptoms."

That there is much truth in this observation is apparent from the surprising rapidity with which extensive effusions of blood are absorbed, and laceration of the soft tissues after some dislocations and bruises are healed, when there is no outward wound communicating with the seat of the injury. The great source of danger in compound fractures and dislocations is doubtless in the exposure of the lacerated parts to the action of the atmosphere. The dangerous effects of the admission of the air into the sacs of large abscesses is also well known to every surgeon.

Postscript.—The principle of subcutaneous division may be advantageously applied to other operations, besides that of the section of contracted muscles and tendons in cases of deformity.

In a recent number of the *Gazette Medicale*, we observe that M. *Barthelemy*, surgeon of the Hospital *Gros Caillou* at Paris, has strongly recommended this method of dividing synovial tumors. He slides a longish narrow-bladed scalpel under the integuments, and cuts the tumor fairly across in the middle, so that all its contents must be extravasated into the surrounding cellular tissue: the knife is then withdrawn by the small puncture, and firm compression is made on the part for a few days.

M. *Barthelemy* mentions three cases in which this mode of treatment has been quite successfully adopted. He suggests also, that perhaps other kinds of tumor may be advantageously treated in the same manner.

M. *Malgaigne* also has adopted in one case, where there were several ganglions or synovial swellings over different joints, the method of dividing the tumors fairly across from side to side under the integuments. He suggests its applicability to the treatment of some cases of hydrocele.—*Gazette Medicale*.

M. GUERIN ON CLUB-FOOT, WREYNECK, &c. &c.

IN a lecture which this gentleman recently gave of the results of his clinical practice, during a period of three months, in the treatment of various sorts of deformity, he thus explains his views as to the primary cause of club-foot, and of congenital irregularities of the joints, as well as of some kinds of deformity affecting the spine.

This cause, in his opinion, is the contraction, acting unequally and irregularly, of the muscles of the part.

"All congenital articular deformities are, like club-foot, the effects of con-

valvise muscular contraction; and the various sorts of these deformities are the results of the combinations of this contraction differently distributed in the muscles of the trunk and of the limbs."

In confirmation of the truth of this opinion, he alludes to the state of the muscles of the calf in cases of club-foot: they are hard, unyielding, and, as it were, matted together; the tendons are stiff and projecting, and so tense as to resist all attempts to restore the joint to its right position. The muscles chiefly affected in club-foot vary in the different varieties of this deformity. Thus when the foot is twisted outwardly, the tibiales, anticus and posticus, are the most contracted; when it is turned inwardly, the tibialis posticus, the adductor, and the flexor pollicis are at fault; in cases of valgus with abduction of the foot, the interior and lateral peronei are chiefly affected; and in complex club-foot, the extensors and the flexors of the toes are all more or less unnaturally contracted. In addition to the irregular contraction of certain muscles, there is in some cases, at the same time, a greater or less degree of partial paralysis.

The following table will indicate, in a certain degree, the comparative frequency with which different muscles of the leg are apt to be affected in club-foot:—

In 17 cases, the tendo Achillis was divided.					
12	"	the tendon of the tibialis ant. was divided.			
3	"	"	"	"	post. "
1	"	"	"	"	extensor dig. "
4	"	"	"	"	extens. pollic. "
1	"	"	"	"	peroneus ant. "
3	"	"	"	"	flexor digitor. "
3	"	"	"	"	flexor poll. "
2	"	"	"	"	abductor poll. "
3	"	"	"	"	flexor brevis dig. "
5	"	"	"	the aponeurosis plantaris "	

54

" You thus see, gentlemen, that the tendons of every muscle of the leg, with the exception of the lateral peronei,* have been divided. Conformably to our principles, we have attacked each variety of the deformity, by the section of the tendon or tendons producing it. In no one instance have we failed: you have seen successively disappear the different elements of each deformity by the practice that has been pursued. Where my predecessors were satisfied with restoring the normal *direction* of the foot by the division of the tendo Achillis, we have laboured to effect the complete restoration of its *forms*, the removal of the *curvatures* of the plantar arch, of the forced abduction of the foot, of its *curvatures* inwards, of the subluxation of the toes, and of the twisted position of the foot—elements, the cause and mechanism of whose production were quite misunderstood, and the proper treatment of which had been quite overlooked."

M. Guerin next alludes to the various auxiliary means, such as manipulations, bandages, plaster of Paris moulds, and machines, used in the treatment of club-foot and other such like deformities.

He admits that each of them is respectively useful in certain cases. By well applied manipulations, after the contracted tendon or tendons have been divided, the foot may sometimes be at once restored to its right position almost as speedily as when a dislocation is reduced. When, however, the resistance is

* These muscles were divided in a case which occurred subsequently to the delivery of the lecture.

much greater, then recourse must be had to bandages, instruments, and plaster moulds. M. *Guerin* speaks in terms of high praise of the last-named means.

"When the deformity has been very great, and the resistance is so decided as to prevent the adjustment of the limb either with the hand alone, or with the aid of instruments, (after the section of the contracted tendons) or when the skin is so tender that a sufficient degree of mechanical compression cannot be employed without risk of injury, then the plaster mould, by distributing an equal amount of pressure on every point of the limb, and by retaining and concentrating on its surface the cutaneous exhalation, is by far the best means for overcoming the resistance, and repairing any injury to the integuments which may have been caused by the use of either bandages or instruments. Such circumstances have several times occurred in our practice during the treatment of the extreme and complex sorts of club-foot, in children of from two to four years of age."

The period of time required for the cure of club-foot varies a good deal according to the duration, and the particular form or variety of the deformity that exists. About four weeks may be considered to be about the average time required; but some cases do not require above three weeks, and others need nearly three months before a complete cure is obtained. Whenever the case is of a complicated nature, as when the primary or essential deformity is associated with other deviations from the normal shape and direction of the foot, the treatment required will necessarily be not only more protracted and troublesome, but is seldom so perfect and complete as in simple cases.

Besides the cases of club-foot treated at the Clinique of M. *Guerin*, there were ten cases of *wry-neck* admitted. His remarks on this deformity are to the following purport:—

"You now know that the two phases—the ancient and the recent—of this deformity are two morbid states, very different from each other, of the muscular system, and which require different methods of treatment. We have already explained to you that permanent *contraction* (contracture) is very different from *retraction*, and we have insisted the more on this distinction, seeing that no surgeon had attended to it before ourselves. The *former* is the spasmodic shortening of a muscle, without any appreciable alteration of its tissue, so that, if the contracted muscle were stretched out, all its normal characters would be at once restored. The *latter*, on the contrary, is that shortening produced at first indeed by contraction, but in which the texture of the affected muscle has become subsequently more or less deeply altered, and has thus assumed a greater or less degree of a fibrous or of a fatty consistence.

Attention to the distinction between these two very different conditions of a contracted muscle is necessary to the establishing of a scientific practice. If there be simple *contraction*, we may hope to effect an elongation of the contracted muscle by means of extension, rubbing, shampooing, &c.; whereas, if there be genuine *retraction*, the only rational method of relieving the deformity consists in dividing the affected muscle.

We have exemplified this distinction, before your eyes, in the treatment of *wry-neck*, according as the deformity has been of old or of recent formation; and the success which has attended our practice has abundantly proved the correctness of the diagnosis now pointed out.

Among the most useful means to promote the elongation of muscular contraction is the use of friction with antimonial ointment: the eruption which this excites has seemed to me to prepare the way for the more successful employment of extension. In three cases of *wry-neck* treated before you, the re-adjustment of the head has appeared to be intimately connected with the eruption of the pustules over the contracted muscle."

M. *Guerin* subsequently alludes to the operations of dividing the biceps,

semitendinosus, semimembranosus, rectus internus, Sartorius, &c. for relieving the deformities of the knee and hip. He concludes by stating that—

“ During the last four months I have performed before your eyes 68 operations of dividing tendons and muscles, in not one of which has any troublesome symptom supervened, and all of which (with upwards of 400 other cases of analogous operations performed by me during the last four years) tend to confirm the truth of my theory of *subcutaneous wounds*, and establish the superior advantages which I have attributed to this method of operating over the usual one.”—*Gazette Medicale*.

M. MALGAIGNE ON HERNIÆ.

M. *Malgaigne* has, during the last season, delivered a series of lectures on herniæ at the central bureau of hospitals in Paris. From these we learn that, according to his statistical enquiries, nearly one-twentieth of the entire population in France are affected with ruptures. It is therefore one of the most important duties of every surgeon to make himself thoroughly master of every practical point on the subject of an infirmity that is of such frequent occurrence. M. *Malgaigne* very justly remarks that professional men have far too much neglected the management of *reducible* herniæ, and have left the construction of trusses altogether in the hands of mere machinists. He says, “a few years ago there was scarcely a surgeon, with the exception of Sir *A. Cooper* and some of his pupils, that knew how to put on a truss properly. The mere bandage-maker was certainly better qualified to advise a ruptured patient as to his truss than the medical attendant. Thus when *Salmon* proposed his apparatus, known in France by the name of the *English bandage*, our surgeons did not at all understand its simple mechanism, and they suggested some modifications which quite destroyed its utility.”

M. *Malgaigne* confesses that he knew as little of the matter as any of his confreres, four years ago, when he was appointed examiner of all the herniary patients who presented themselves at the Central Bureau. From that period to the present he has examined upwards of 2000 cases of rupture and of prolapsus; and his attention has necessarily been directed in an especial manner to discover which are the most efficient and serviceable trusses. With this view he selected several cases in which the rupture was the least easily retained, and he shewed them to the various instrument-makers in Paris for the purpose of trying the comparative value of the different forms of trusses in the same patients and under the same circumstances—the only true way of determining their relative superiority. Some of these gentlemen acceded to the proposal with willingness, but others with an ill-dissembled reluctance.

According to the researches of M. *Malgaigne*, inguinal hernia is of much more frequent occurrence even in women—contrary to what is usually stated in books—than crural hernia.

The following observations on the prolapsus vaginæ are novel :—

“ It is usually stated by writers that vaginal cystocele is of exceedingly rare occurrence; whereas I find that it is the most common form of vaginal prolapsus. Again, rectocele was not even mentioned in surgical writings a few years ago; and yet it is quite as frequent as the genuine prolapsus of the uterus.”

M. M. proceeds next to point out the *relative frequency of hernia in the male and female sex*.

Of 2767 cases, which he examined during the year 1836, 2203 occurred in males, and 564 in females; or about 4 to 1; and of 2373 cases examined in

1837, 1884 occurred in the former, and 489 in the latter. The relative frequency therefore of hernia in the two sexes may be stated to be as 4 is to 1.

Relative frequency at different Periods of Life.

If we endeavour to discover the relative frequency of ruptures during the first year of life to the entire number of cases taken at all ages from infancy to old age, we shall probably find that it may be stated at about $\frac{1}{10}$ of the whole. It is not the same indeed in the two sexes; for it would seem to be about $\frac{1}{10}$ in male infants, and only $\frac{1}{20}$ in female ones. But even this proportion is much higher in the female sex than at all the other periods of life put together. The reason of this is easily given. During the first year of infancy ruptures are almost always either umbilical or inguinal. Now as to the former kind, the one sex is quite as much exposed to it as the other; and, even in respect to the latter, it is necessary to bear in mind that the canal of *Meckel* in female children is as frequently open as the inguinal canal in male ones. It is quite true however that the descent of the testicles must favour the predisposition to rupture at this point, and is to be regarded as the cause of the greater frequency in boys than in girls.

The frequency of ruptures diminishes very sensibly from the first to the second year; and this diminution becomes greater and greater till about the twelfth or thirteenth year. From about this period the tendency begins very sensibly to augment, at least in the male sex; owing no doubt partly to the incipient increase of development in the generative organs, and partly also to the violent muscular efforts which boys employ in their various sports. But it is chiefly from the 20th to the 28th year that the great increase of herniæ in both sexes is most remarkable. In women, exomphalos is now not unfrequent; and crural rupture—before this period of life excessively rare—is also met with. The changes that have taken place in the female pelvis and in its soft envelopes, more especially if the woman has married and become a mother, will at once account for the great increase of ruptures during the above-mentioned period of life. This increase amounts to at least a double; whereas, in the male sex, it does not exceed by one-fourth of what it had been.

From the 28th to the 35th year, the tendency to ruptures in both sexes seems to be stationary; but from the latter to the 40th year it again increases, and this very sensibly too.

From the 40th to the 50th year, it again decreases in men, but rather increases in women.

M. *Malgaigne*, from an examination of the tables drawn up by the medical officers of the army appointed to inspect the young men, between 20 and 21 years of age, who have to serve as recruits every year, estimates that at this period one in every 32 is affected with some form of hernia; that at 28 years of age there is one in every 21; at from 30 to 35 years, that there is one in every 17; and at from 35 to 40 years there is one in every nine. The ratio remains then stationary till about the 50th year; after that it rises to about a sixth; from the 60th to the 70th year to a fourth; and from the 70th to the 75th year to nearly a third of the male population.

With respect to the ratio of the number of persons affected with herniæ to the entire population in France, M. *Malgaigne* states that he estimates it at a one-twentieth.

He then proceeds to examine the causes, predisposing and exciting, of ruptures. Among the former, hereditary tendency is one of the most influential. Of 37 cases of ruptures of different kinds he found that in 87 the parents of the patient had been similarly affected. Stature is another; a very large proportion of herniæ patients being above the average height. This we might indeed, at first sight, as tall men are seldom so robust and strongly-knit together as shorter men.

Alluding to the French army, M. *Malgaigne* observes :—"The regiments of Carabineers, which are the finest men of our army, are perhaps those which can worst support protracted fatigue, and which send most invalids to the hospital. On the other hand, our Hercules of the North are short-built men, who are capable of resisting for a much greater length of time every deteriorating influence."

Nearly twice as many inguinal herniæ occur on the right side as do on the left one. This may be owing to the greater effort of all the muscles on the right side, and also to the larger size of the right testicle and spermatic cord than of those on the left side.

The greater frequency of herniæ on the right side applies to infants as well as to adults. In the case of the former, the reason will probably be found in the circumstance that the right inguinal canal is (according to the observations of *Camper*) longer of closing after birth than the left one.—*La Lançette Française*.

MM. RAYER AND BRESCHET ON GLANDERS.

The Minister of War having recently addressed the Academy of Sciences on the subject of the great prevalence of glanders among the horses of the army, MM. *Breschet* and *Rayer* undertook a series of experiments and researches to determine the laws of its contagion and the mode of its transmission to man. They justly remark that, "as comparative anatomy and physiology have thrown much light on human anatomy and physiology, so the study of the diseases of the lower animals will in all probability contribute to dissipate many of the doubts and obscurities which still hang over many departments of human pathology."

Glanders, one of the most fatal diseases of the horse, has the baneful property of being communicable, alike by inoculation and by infection, to other animals, and strikingly to man himself. The truth of this has only within the last few years been proved beyond dispute. Even in the present day some veterinary surgeons continue to affirm that the disease is exclusively peculiar to solipedous animals; but in our opinion numerous indisputable observations and experiments have satisfactorily shewn that it is transmissible to man and some of the lower animals, as the dog, the sheep, and the goat.

It is however to be observed that it is only among solipedous animals that the disease has ever been observed to originate spontaneously: no authentic example of its original development in any ruminant or carnivorous animal has been recorded. For instance, in reference to dogs, they have been known to have lived with impunity for a length of time in stables where numerous glandered horses are kept; and yet it is equally well known that if they are directly inoculated with glanderous matter, they exhibit all the symptoms of the disease in the horse.

In the case of man, no instance of the spontaneous development of glanders has ever been observed; but in all the instances on record the disease seems to have originated either by the direct inoculation of the glanderous matter into a wound, or by the infection of the atmosphere of stables where glandered horses were kept.

It seems that certain diseases are primarily peculiar to certain genera of animals, but that, when once developed, they are capable of being communicated to other genera. Such is the case with glanders; such also is the case with hydrophobia of the dog, and with the malignant pustule of ruminating animals. This peculiarity in the original development of some diseases deserves the notice of pathologists and naturalists; for if man does not spontaneously generate these maladies, the exemption certainly cannot be attributed to his not being exposed to the influences which are believed to engender them. Thus fatigue,

imperfect and unhealthy nourishment, and the crowding together of numbers in a limited space, (to which causes veterinary surgeons usually attribute the spontaneous development of glanders,) have never been known to have given rise to the disease in man.

The disease of glanders may be either acute or chronic; it may either pass through its course in a few days, or continue for months or even years before it proves fatal. The acute disease is much more contagious than the chronic form; and it would even seem that the latter is by no means readily communicable, unless the disease from some cause or another be temporarily aggravated. The circumstance of the greater contagiousness of the acute than of the chronic form of glanders in the horse finds a parallel in the history of the syphilitic disease in man.

We know that blennorrhagia and chancre, in their chronic condition, are by no means readily communicable from one person to another, that the pus from old venereal sores is only feebly contagious, while that from consecutive sores is not so at all.

The circumstance of the acute and chronic forms of glanders differing so much in their contagiousness has had the unfortunate effect of inducing some veterinary surgeons not only to regard them as two distinct diseases, but also to question the contagiousness of the disease under any condition. The French veterinary surgeons have fallen into this error more than those of any other nation; and it is probably to this circumstance that we are to attribute the great prevalence of the disease in various parts of the country, more especially among the horses of our armies.

It is surely unnecessary to adduce proofs in the present day to shew that the disease is communicable from the horse to man. Independently of numerous well-authenticated cases reported within the last eight or ten years, we may state that we have succeeded in producing the disease in the horse and in the ass by inoculating them with the matter taken from glanderous pustules in the human subject. This experiment has been repeated by others, and has been attended with the same results.

It appears that the ass is more readily susceptible of the disease by inoculation than even the horse, usually developing itself in the former with unusual promptitude and intensity.

To shew the identity of the disease in the horse and in man, let us briefly review the characteristic or pathognomonic symptoms of the disease, as recognized by veterinary surgeons. They are three—the discharge from the nostrils, the engorgement of the submaxillary lymphatic glands, and the ulcerations of the nasal mucous membrane. Now we acknowledge that these three symptoms may be imperfectly manifested, in the human body, when infected: the discharge from the nostrils seems to be absent altogether in some cases. Perhaps however in these very cases the discharge may flow back into the fauces, while little or none escapes from the nostrils. Hence in glanders occurring in man, we frequently observe that there is an expectoration of mucus tinged with blood, whereas there is never any such symptom in the horse. Again, although the nasal mucous membrane may be affected in man, yet the enormous difference between the extent of the septum in man and in the horse may account for this symptom being so much less striking and conspicuous in the former.

As to the essential characters of the nasal eruption, and as to its seat and the nature of the morbid secretion in acute glanders, we do not hesitate to assert that they are identically the same in man and in the horse. The eruption is observed on the surface not only of the septum, but also of the spongy bones and on the posterior part of the velum palati; more rarely it occurs also on the anterior part of the velum and in the inside of the cheeks.

The engorgement of the submaxillary glands—a symptom which very generally exists in the horse—is of comparatively rare occurrence in the human sub-

ject. The absence of this symptom in the latter has been one of the causes that have led some to deny the identity of the disease, as it occurs in the horse. But it may be satisfactorily explained; for, independently of the much greater extent of the diseased nasal surface in the horse, it is found that there is a much more direct relation between the nasal fossæ and the lymphatic glands below the jaw in this animal than in the human subject.

As to the nature of the nasal eruption and the ulcerations which follow it, there is the most obvious identity. It must indeed be confessed, that when the eruption is scanty and limited in man, its traces are sometimes not very obvious after death, whereas in the case of a glandered horse they are always abundantly conspicuous.

There is often considerable difficulty in determining the existence of chronic glanders in man, which is not experienced in the case of solipedous animals.

Every horse, which is affected with a chronic discharge from the nostrils, with ulcerations on the septum or spongy bones, and with a thickening of the mucous membrane, accompanied with an engorgement of the submaxillary glands, is pronounced to be glandered; but in man, it is not sufficient to ascertain that there are ulcerations in the nostrils, and a more or less complete destruction of the septum (even with an engorgement of the submaxillary glands) to mark the case down as one of glanders. Every physician knows that this category of symptoms may exist in the human subject quite independently of any glanderous infection, and not unfrequently is the result of venereal and scrofulous disease. Hence it is always necessary to establish that such is not the case in a human patient, before we admit that the malady is of a glanderous nature.

If syphilitic or scrofulous ulcerations of the nasal passages can, up to a certain point, simulate the chronic glanders in man, on the other hand we have the certainty that the latter disease has in more instances than one been mistaken for a venereal affection.

In the small number of cases of chronic glanders observed in man, the swelling of the submaxillary gland has been so rarely noticed, that this very symptom, to which so much importance is attached by veterinary surgeons as indicative of the disease in the horse, must be considered in him as a proof rather of scrofulous than of glanderous contamination. Not only in several well-authenticated cases of chronic glanders in the human subject has the swelling of the glands been absent, but it likewise deserves notice that this is an almost constant symptom of syphilitic ozena accompanied with ulcerations of the throat. Besides being one of the most common of all the outward marks of a scrofulous diathesis, the enlargement of these glands is, every one knows, apt to be induced by various lesions of the lower jaw, eruptions on the scalp, ulcerations of the gums and cheeks, &c. &c.

The glanderous eruption has been observed both in man and in the horse; it seems to be, on the whole, more frequent in the former than in the latter.

As to the lobular pneumonia, which has been recognised as one of the lesions of the farcy glands (*morve farcineuse*) in man, its existence as an element of the acute farcy glands in the horse, after having been stoutly denied by many veterinary surgeons, has been within the last few years observed so frequently and so decidedly, that no longer any doubt can remain on this point. In this respect therefore the analogy is complete.

As to the lesions of the skin in acute glanders in man and in the horse, we are struck with this primary difference, that the development of pustules on the skin and of subcutaneous and intermuscular abscesses is of much more frequent occurrence in the former, than in solipedous animals. Moreover, in man, the eruption is usually rather indistinct on all the points of the surface of the body, (the face excepted, where it is generally most abundant,) whereas, in the horse, it appears most frequently on those parts free from hair, such as the circumference of the

mouth, and the "fourreau." In dogs that have been inoculated with the virus of glanders, the scrotum has been sometimes found to be seized with inflammation and gangrene, while every other part of the body has remained exempt.

It is true, indeed, that in general, the acute glanders being regarded as so very infectious, and the diseased horses, in consequence, being usually killed before the malady has passed through all its stages, it is scarcely possible to determine with accuracy the relative frequency of the cutaneous eruption in them. Still we have sufficient data to warrant the assertion that it is less common in them than in the human subject.

It would seem, indeed, that the presence of thick hair upon any part of the body is an impediment to the formation of pustules or other eruption there. This we observe to be the case not only in horses affected with glanders, but also in cows affected with cow-pox, and in sheep affected with the malignant pustule.

In the acute farcy glanders, the cellular tissue and the lymphatic vessels which permeate it, become inflamed, and suppurate alike in man and in the horse. In both, infiltrations of purulent matter and deposits of plastic lymph are observed in the interstices of the muscular fibres; but the cellular tissue of the horse presents more rarely numerous and extensive abscesses than that of the human subject. Perhaps upon the whole the process of suppuration is more readily excited in man than in the lower animals.

In the horse as well as in man small deposits of pus have been found between the pericranium and the bones of the skull, and the latter have been several times observed to be in a carious condition. As to the relative frequency of osseous disease from farcy glanders in the human subject and in solipedous animals, it is scarcely possible to determine this point, for want of sufficiently numerous and accurate data. The study of these glanderous lesions of the bones is the more interesting as several physicians, from not being aware that they are known to occur in the horse, have not hesitated to attribute them, when they have been observed in men affected with the disease, to a syphilitic taint, even though there was not a single symptom to denote the existence of such in the patient. The fact of the same osseous lesions, recognised as of glanderous origin in the horse and attributed to syphilis when occurring in man, may be cited, among many other facts, as a proof of the advantages to be derived by the physician from a knowledge of comparative pathology.

Inflammation of the veins, and of the lymphatic vessels and glands, has been observed both in man and in the horse, and in nearly the same proportion. The same, perhaps, may be affirmed as to the relative frequency of circumscribed abscesses in the parenchyma of the liver, spleen and kidneys.

In fine, it may be confidently asserted, that the various lesions which have been observed in the acute and chronic glanders of the horse, have been met with in the acute and chronic glanders of the human subject. The differences which have been noticed, and to which we have alluded, are the less degree of nasal discharge, the occasional expectoration of it from the throat, the greater frequency of the pustular and gangrenous affection of the skin, and the rarity or total absence of the swelling of the submaxillary glands in man than in the horse.

The diagnosis of acute glanders in the human subject is not, in the present day, attended with greater difficulties or uncertainty than in solipedous animals. When the very existence of the disease was not recognised by medical men, and when they were not in the habit of examining the condition of the nasal passages after death, glanders in the human subject was most frequently confounded with malignant pustule.

But these two diseases differ from each other in many respects. In the former, the constitutional symptoms precede the eruption on the skin; whereas,

in the latter, the carbuncular affection is primary and at first local; and in it we do not observe either the numerous farcy abscesses nor the characteristic ulcerations of the nostrils. In short, the acute form of farcy glanders, when it occurs in the human subject, is perhaps of all eruptive fevers that of which the diagnosis is the most easy: the truth of this assertion will appear from the circumstance of the disease having been at once recognised, and correctly too in every instance, in fifteen cases which have presented themselves within a short time in the hospitals at Paris.

In man the subcutaneous abscesses and a pustular and gangrenous eruption on the skin are often the earliest positive signs of glanderous infection, and these are well characterised before any ulcerations in, or discharge from, the nostrils can be detected. In the horse, on the contrary, the certainty of the diagnosis rests chiefly on the existence of a discharge from the nostrils, and of a pustular and gangrenous eruption in the nasal passages—the eruption being easily discovered in the septum by slightly opening the nostrils.

The diagnosis of chronic glanders is much more easy in the horse than in man. In fact, every case of chronic nasal discharge, attended with swelling of the glands in the horse—unless, indeed, these symptoms have been induced by the accidental introduction of a foreign substance into the nostrils, or by some cancerous affection of these parts—is at once considered to be of a glanderous nature. In such circumstances the veterinarian has not, like the physician, to ascertain if the nasal ulcerations are or are not of a syphilitic or a scrofulous origin.

Lastly, as to the treatment of glanders, whether in the human subject or in the horse, we are sorry to confess that as yet scarcely any progress has been made to the discovery of a cure. In an immense majority of cases, whether the disease be of the acute or of the chronic form, it proves fatal to the horse; and in man it has been uniformly fatal.

The leading and chief object must be to prevent, if possible, the development of the disease in the horse, by removing all the causes which may give rise to it, or which favor its propagation. Above all, let any doubts as to the contagiousness of the disease be for ever at an end; for, surely, no one who has once witnessed the ravages committed by the disease in stables, into which one glandered horse has been admitted, can question it for a moment. Neglect in this respect has been the chief cause of the frightful mortality among the horses of the army in various barracks throughout the kingdom. We trust that henceforth stricter and better precautions will be taken, not only in our military and public, but likewise in all private stables, to arrest the destructive progress of this pestilence.—*Gazette Medicale*.

On the preceding memoir M. *Magendie* took occasion, at a subsequent meeting of the Academy of Sciences, to comment in the following strain.

"I will tell my honourable confrere that, when he asserts that the chronic glanders is of the same nature as the acute malady, he is quite in error, and that he is equally mistaken in affirming that the former disease is contagious, or that the glanders of the horse is communicable to man by the way of contagion.

With respect to the first of these points,—the difference between the acute and chronic forms of glanders—the chief distinguishing marks are these: the acute disease usually runs its course rapidly, and from its very commencement compromises the life of the animal, rendering it quite incapable of any exercise; whereas in the chronic disease the horse is in most instances fit for work, and not only takes its food well, but will propagate its race, as if it were in good health, for a series of months and even of years. Indeed, there are so few grounds to confound the two diseases, that they may actually co-exist in the

same animal, and the veterinarian can distinguish what appertains to the one and what appertains to the other.

With respect to the contagiousness of the chronic disease, I may state that the commission, recently named by the Minister of War to examine minutely into the history of glanders generally, made numerous experiments to determine whether healthy horses ever become infected by being kept in the same stables with such as were diseased. Now although this proximity was sometimes continued for upwards of a twelvemonth, in no instance had we the slightest reason to suspect the communication of the chronic disease from one animal to another."

M. *Magendie* is equally sceptical as to the transmissibility of equine glanders to the human subject.

" For my part, I, who have studied the disease in the horse on a wide scale, and have seen persons affected with the malady which my confreres denominate glanders, must confess that I have never discovered the supposed resemblance, and should have been most happy if it could have been pointed out to me."

It would seem, nevertheless, that M. *Magendie* has been puzzled what to make of the disease, which, he cannot deny, is apt to seize persons who are brought much in contact with glandered horses.

" If," says he, " I may judge by my own observations of this disease, which I regard as *new*, it is probably of a carbuncular nature, and is dependent upon a morbid state of the blood."

Several of the Academicians replied to M. *Magendie*, who seems to stand very much alone* in his negation of most of the positions laid down in the memoir of MM. *Rayer* and *Breschet*.

The following facts were mentioned by one gentleman on the authority of M. *Leblanc*, one of the most distinguished veterinary surgeons in Paris.

1. Pus obtained from the pustules on a man affected with glanders, and also the nasal mucus of the same patient were inoculated upon an ass: the animal speedily exhibited all the symptoms of genuine glanders and died. The correctness of this fact was ascertained by several eminent veterinarians.

2. A quantity of the same pus and mucus was inserted in a horse; in the course of a few days glanderous and farcy lesions presented themselves, and the animal was killed at the end of a month. On dissection, all the morbid appearances usually observed were found.

In conclusion, we may state that a commission, consisting of MM. *Pariset*, *Juge*, *Emery*, *Hazard*, and *Guarard*, recently sent to the head Prefect of Police their report, wherein, among other regulations, we find the following.

1. " It is prohibited to any one to sleep, or to cause another to sleep, in a stable where there are any horses suspected to be glandered."

4. " Every person who may have in his possession a horse, mule, or ass affected, or suspected to be affected, with the glanders or the farcy, shall be bound to make immediate declaration of the same, in rural districts before the mayor, and at Paris before a commissioner of police."

15. All stables or buildings where horses or other animals affected, or sus-

* We have subsequently discovered that M. *Larrey* is not satisfied as to the transmission of the glanders from the horse to the human subject. He alluded to his experience during the protracted continental war, carried on by France for a quarter of a century, during the whole course of which he had never heard of any horse-soldier having ever caught the disease. Without, however, denying the possibility of inoculation, he is of opinion that further enquiries are necessary before we can admit its perfect truth.

pected to be affected, with the glanders or the farcy shall be well ventilated and purified by the orders of the mayor or commissioner of police; and they shall not again be occupied until it has been ascertained by an expert veterinary surgeon that the causes of infection no longer exist.—*Gazette Medicale*.

ON THE STRUCTURE AND CONNECTIONS OF THE PLACENTA.

As the following description and observations are the result of most carefully conducted anatomical investigations, they will be read with interest.

M. Bonamy says, "a woman died in between the seventh and the eighth months of pregnancy. An injection of size coloured with red lead was thrown with great care into the venous system of the uterus from the common iliac vein and one of the ovarian veins. A second injection, composed of the essence of turpentine and coloured with indigo, was then thrown into the uterine arteries from the extremity of the aorta, ligatures having previously been placed upon all the vessels capable of permitting the injection to pass to the lower limbs. The uterus was carefully removed from the body and conveyed to the lecture-room of M. Cruveilhier. The uterus was then laid open at some distance from the attachments of the placenta, and the fœtus removed. We immediately observed that the umbilical vessels on the placenta and along the entire extent of the cord were distended with a black fluid, which we imagined was the dark turpentine injection thrown into the uterine arteries. But we soon discovered our error; for on dividing the cord nothing but blood escaped.

Injections, consisting of linseed oil coloured with white lead and with yellow ochre, were thrown into the umbilical vein and then into one of the umbilical arteries.

Already we perceived on the foetal surface of the placenta the red fluid which had been injected into the uterine veins; and the question naturally suggested itself—By what channels had it reached so far? To solve this, it was necessary to examine with great care the nature of the connexions of the placenta with the uterus.

We carefully detached a small portion of it by cutting with the greatest precaution first the *decidua*, and then the ligamentous bridles which attached it to the inner surface of the uterus: we could thus examine the utero-placental connecting tissue and the vessels which it might contain.

This tissue is of an albuminous or fibrinous nature, and is formed of numerous lamellæ which cross and intersect in all directions, and adhere to each other only by a few points of their surface.

If air is blown in at the places where they are slightly apart (où elles ne sont que contiguës) we observe that cells of various forms and sizes quickly make their appearance. These cells having been seen by several anatomists developed by the injection which had been thrown into the uterine veins, it has been a general belief that they are actually veins which communicate freely with the uterine system of veins.

An author to whose authority we have always confidence in appealing, M. Velpéau, has however dissented from this doctrine; and "in eight cases in which I examined the placenta *in situ* (he says), I have not been able to discover any sinuses or orifices which bore any resemblance to what have been described by writers under these names."

M. Jacquemier, in his recent work on the uterus published last year, has described with the greatest minuteness these cells under the title of veins, and has gone so far as to distinguish three principal varieties of them. One set, he says, is extremely short, (their *trajet* not exceeding one or two lines), and is not very oblique in their direction; whereas, another set is very obliquely or slantingly

arranged, and is most frequently situated in the direction of the inter-lobular scissures; the last set has the most remarkable distribution, being arranged in the form of a crown or circle around the placenta.

All these so-called veins communicate, according to M. *Jaquemier*, with the uterine veins by large orifices on the internal surface of the uterus where the placenta is attached. We must confess that we have not been able to discover these large orifices of communication described by this author; and in our experiment the cells did not contain a particle of the injection which had been thrown into the uterine veins. We first blew air into them, then we filled them with water; but neither the one nor the other of these fluids seemed to penetrate. (To render these experiments more decisive, we had previously freely exposed the uterine veins by dissecting off a flap from the outer surface of the uterus.) These alleged orifices in truth do not exist; we regard them as mere solutions of continuity produced most frequently by the injection having been thrown in with too much force. The materials commonly employed have been suet or wax, neither of which, it is well known by anatomists, is at all suited for the injection of the veins: in consequence of the rapid cooling and solidification of these substances, it is necessary to throw the injection in hurriedly and with considerable force. Hence rupture of some of the veins almost inevitably takes place; this is especially apt to happen with the injection of the uterine veins, during the state of pregnancy, in consequence of their parietes having become much distended and consequently weakened. When therefore we examine the attachment of the placenta to the gravid uterus, after such an injection has been used, we almost inevitably find some of the injected matter, like small lumps, in cavities the orifices of which, although communicating with the veins, are in truth nothing but ruptures.

The utero-placental tissue adheres most intimately not only to the walls of the uterus, but also to the large veins which are distributed on its internal surface. In detaching the placenta, the rupture of these adhesions is sufficient in itself to cause the rupture of the parietes of the veins; but in truth there is more than these adhesions between the uterine veins and the utero-placental tissue, for there is a "veritable continuité" established by minute-blood-vessels which may be observed imbedded in the substance of the adhering lamellæ. These minute vessels are the genuine utero-placental veins. Now when the adhering lamellæ are lacerated in detaching the placenta from the uterus, these vessels are necessarily torn across at their embouchure into the large veins, the rupture of which also is generally occasioned at the same time.

In the first portion of placenta which I detached, I did not perceive the orifices of communication, in consequence no doubt of the adhering utero-placental tissue having been cleanly divided with a sharp scalpel, and not torn across. But the same precaution being not used in detaching the next portion—which was separated with the fingers—the ruptures of the uterine veins were at once made obvious by the escape of the injected fluid.

Now if it can be shewn that the cells in the utero-placental tissue do not communicate with the veins, it follows that the appellation of utero-placental veins, which has been given them by many writers, is quite misapplied, and gives rise to a most erroneous opinion as to their real nature. The parietes of these cells are very unresisting, and yet they must contain a fluid in circulation. It is true that the blood is stagnant in them as in a lake, to use the expression of *Haller*; but when the contractions of the uterus come on during labour, this blood will be set in motion and will re-act against their parietes, which would readily give way, and then a hæmorrhage more or less copious would necessarily follow, if it were not that the uterus was distended with its contents, and thus a uniform pressure is kept up at every point of its internal surface.

We shall now make a few remarks on the small vessels which we have described to be imbedded in the lamellæ of the utero-placental tissue, and which

transmit the venous blood of the uterus into the placenta—in other words, the genuine utero-placental vessels. The veins are of about the same size as the arteries, and sometimes rather larger; some that I measured had a diameter of two or three lines. The veins were easily distinguishable from the arteries, by the colour and nature of the injection within them, and which consisted of what had been thrown into the uterine veins: they were rectilinear; and their anastomoses, which were very frequent, formed extensive plexuses on the parietes of the cells. These plexuses penetrated at every point into the uterine surface of the placenta; their terminations in the large uterine veins were quite manifest. On the other hand, the arteries were arranged spirally, and their anastomoses were comparatively few; they were less numerous at the circumference than at the centre of the placenta, the entire thickness of which was penetrated with them. These arteries were distinctly observed to be continuous with the arteries of the uterus.

Besides these blood-vessels, some writers have described lymphatic vessels in the placenta. *Lanšk*, in his memoir on the connections of the placenta, has admitted the existence of these vessels in the following passage:—"Since there is no direct communication between the blood-vessels of the uterus and those of the placenta, and since the cells where, it is has been alleged, the blood might be effused actually do not exist, the only communication therefore which we can admit between the mother and the fœtus is that by lymphatic vessels, of which some terminate in the vessels of the placenta and others in those of the deciduous membrane. These vessels (the lymphatic), by their termination in the sanguineous vascular system of one of these organs, appear to be grafted at their origin on those of the other, in such a manner that the vessels, which spring or originate from the vessels of the uterus, and which terminate in the vessels of the placenta, draw from the maternal blood certain materials to be conveyed into the circulation of the fœtus:—on the other hand, the lymphatic radicles, which are grafted on the blood-vessels of the placenta, terminate in the vessels of the uterus, for the purpose of withdrawing from the fetal blood such matters as are no longer useful to it, and excreting them into the venous system of the mother."

M. *Breschet* has very justly remarked that the above explanation is all very ingenious, but that it is quite unsupported by any anatomical facts.* The vascular connexions of the placenta with the uterus in the human subject are altogether analogous with those observed in the lower animals. We find in the former the veins and the arteries which we have had occasion to describe—(M. Bonamy had in the previous part of his memoir described the anatomy of the placenta in the carnivorous, ruminant, and pachydermatous animals)—under the name of the maternal vessels of the placenta. We now proceed to describe those which belong to the fœtus, under the name of the umbilical vessels.

The umbilical arteries and veins, on reaching the fetal surface of the placenta, divide into numerous large branches, which are situated under the amnios and chorion. The arterial branches communicate freely with each other in the substance of the same cotyledon. If we throw even a coarse injection into one of the arteries, it returns immediately by another: if we continue to push more in, the injection is found to pass from the arteries into the veins. But if we inject from the veins, the injection does not pass, except with much difficulty, into the arteries. This impediment to the transmission from the veins into the arteries cannot well be attributed to the presence of valves in the former; for they have not been discovered by some of the best anatomists of the present day. If a fine injection be thrown into the veins, the uterine surface of the placenta will

* It is right to state that M. *Lanšk* himself, in the last Edition of his *Manual of Anatomy*, has recanted his former opinion, and expressly admitted that no intermediate lymphatic vessels, such as he had described, can be shewn.

be converted into a close vascular net-work, from which however none of the injected fluid will escape. *Raderer* had already remarked that no blood flows from the uterine surface of the placenta, when it has been just extracted from the uterus, and that none can be forced from it even by pressure. When a placenta, which has been minutely injected, is macerated for some time, we find that it becomes resolved into flocculi covered at numerous points with a soft pulpy substance, which is not easily detached. These flocculi, when examined with a magnifying-glass, exhibit numerous granulations or *acini*, composed of minute convoluted vessels, in the manner of the vessels of the chorial villousities in the cow and sheep. If the maceration be prolonged, the small vessels lengthen out and lose most of their tortuosity.

If we compare the vascular elements which enter into the composition of the human placenta, we see that they are of two kinds, as in the lower animals—viz. the maternal and the umbilical vessels.

In examining the structure of the placenta in ruminant animals, we have seen that the maternal vessels form vast plexuses in the substance of the cotyledons, and then that the vascular filaments of the chorial villousities become blended and entangled among these plexuses. Now the strictest analogy exists between this arrangement and that which we discover in the placenta of the human subject.

Each of its cotyledons is constituted in the following manner; the maternal or utero-placental vessels penetrate it at all the points of its uterine surface, and form in its substance excessively close net-works; the umbilical vessels, which penetrate it from the foetal surface towards the uterine surface, exhibit the same arrangement as the vessels of the chorial villousities, under the form of granules or *acini*; and they are convoluted upon themselves among the meshes of these net-works.

But here, as in carnivorous animals, it is impossible to separate the vessels which belong to the mother from those which appertain to the foetus. The connexion which exists between these two orders of vessels appears to us to result from the membranous sheath which continues to envelop them even in the very substance of the placenta. This sheath is supplied to one set from the chorion, and to the other from the lamellar prolongations of the utero-placental tissue.

The maternal vessels cannot be traced so distinctly as in the placenta of ruminant or pachydermatous animals, since it is not possible to separate the umbilical vessels from them; still they are visible to the naked eye. It is the veins chiefly which form the networks which we have described above; the arteries seem not to penetrate so far into the substance of the placenta.

But this difference may be only apparent, and may arise from the injection of the arteries having been not so perfect as that of the veins.

It follows from the preceding remarks, that no direct communication between these two orders of vessels which constitute the placenta in the human subject can be discovered.

A fine injection thrown into the uterine veins is found to penetrate even to the foetal surface of the placenta, (as in the lower animals,) the maternal vessels extending their ramifications through its entire thickness; but yet we are not able to say that these two orders of vessels—the uterine and the foetal—communicate with each other; but an injection thrown in from the umbilical cord is not found to penetrate into the uterine veins.—*Gazette Medicale*.

Clinical Review.

GUY'S HOSPITAL.

GUY'S HOSPITAL REPORTS. No. X. APRIL, 1840. Edited by GEORGE H. BARLOW, M.A. & L.M. Trinity College, Cambridge; Inceptor Candidate of the Royal College of Physicians, and Physician to the Surrey Dispensary: and JAMES P. BABINGTON, M.A. Trinity College Cambridge; Member of the Royal College of Surgeons. London: S. Highley.

The present Number is not as large in size as sundry of its predecessors, but perhaps it is not less than them in value. A guess may be made on the latter, from a glance at the contents of the volume.

It consists of:—1, Some Observations tending to demonstrate the Dependence of Vascular Organization upon Physical Causes, by Sir Anthony Carlisle, F.R.S. (with Plate)—2, Observations on the Existence of certain Elements of the Milk in the Urine during Utero-Gestation; and on the application of this fact to the Diagnosis of Pregnancy; by Golding Bird, M.D. F.L.S.—3, On the Common Action of the Auriculo-Ventricular Valves; by T. Wilkinson King, (with Plate). 4. On the Surfaces of Contact, or Attrition, on the Valves of the Heart; by T. Wilkinson King, (with Plates)—5. Account of the Fibrous Structure of the Sub-serous Membrane of the Aorta; by Norman Chevers, M.D. (with Plates)—6. On the Morbid Consequences of Undue Lactation; by Samuel Ashwell, M.D.—7. Practical Hints on the Treatment of Stricture; by Bransby B. Cooper, F.R.S.—8. Cases of Excision of the Elbow-Joint; by C. Aston Key.—9. The History of a Gun-Shot Wound, in which the Patella was carried away, and the Knee-joint completely laid open: successfully treated by W. Ward of Huntingdon. Communicated by Mr. Bransby Cooper.—10. Case of the Dislocation of the Shoulder-joint, with Fracture of the Humerus. In sequel to Sir Astley Cooper's Paper on the same subject. By J. A. Hingeston. Communicated by Mr. Key.—11. On the Rapidity of the Circulation in the Lymphatic System; by T. Wilkinson King.—12. Cases and Observations illustrative of Renal Disease accompanied with the Secretion of Albuminous Urine. Memoir the Second. By R. Bright, M.D. F.R.S.—13. On the Proportion of Urea in certain Diseased Kidneys; by G. O. Rees, M.D. F.G.S.—14. Cases of Albuminous Urine, illustrative of the Efficacy of Tartar Emetic, in combination with other Antiphlogistic Remedies, in the acute form of that Disease; by George H. Barlow, M.A. & L.M.

We shall take the practical papers first, as, perhaps, from their intrinsic value, they deserve. We shall commence with that on the:—

MORBID CONSEQUENCES OF UNDUE LACTATION. By S. ASHWELL, M.D.

Dr. Ashwell thinks that the subject has hardly received a fair share of attention. He starts by laying it down as a canon, that *exhaustion*—generally attended by symptoms of re-action, but occasionally by depression, so extreme as almost to conceal any such effort—constitutes the prominent, the essential feature when lactation has become a disease. Anæmia, with irritability and universal pallor, are as apparent as in chlorosis: of course, in different degrees. In some instances there is distressing debility: in other, and less serious cases, there is only trifling anæmia, and proportionately slight pallor. Local congestion, also, as it is the result of an irregular distribution of the blood, may partially modify the anæmia and pallor, by producing, in certain organs, a temporary but morbid energy, and, by fulness of the capillaries, a less pallid and unhealthy aspect of

the surface. Still, exhaustion is the permanent morbid state, associated with undue suckling.

He is of opinion that it may be proved :—

First, That lactation to be morbid need not be long : evil consequences may ensue soon after its commencement ; occasionally, within a few weeks ; more frequently within a period protracted beyond nine months.

Secondly, That organic lesions may, although very rarely, result from undue suckling.

And, Thirdly, That weaning the child is generally indispensable to the cure—the remedy, without which all others will be inefficient.

The majority of women, no doubt nurse well for a reasonable time, but if, from over-nursing, or from nursing with a constitution naturally weak, or artificially enfeebled, it begins to suffer, a train of symptoms is induced which Dr. Ashwell describes.

“ Amongst the earlier symptoms of failure are, a heavy, dragging sensation in the back and loins, and directly between the scapule, when the child is at the breast ; and a feeling of peculiar sinking and emptiness at the pit of the stomach, and over the whole abdomen, for hours afterwards. Inquire particularly, and you will discover, what is often anxiously concealed, that the milk is scanty in quantity, and with difficulty secreted ; and that without long intervals, scarcely any fresh supply would be furnished. At this point, much might be done. If weaning entirely were practised, the symptoms would soon disappear ; or if only partially adopted (by the child being judiciously fed, and the mother's rest at night secured, instead of being continually broken), lactation might be safely continued ; as the appetite, digestive powers, and strength of the parent would be thereby improved. But the attempt to nurse is often persevered in, without these advantages ; and the morbid results are soon aggravated. Together with an excitement or depression of mind, there is a proneness to hysteria ; the pulse is quicker than natural, and easily compressed ; the muscular system is weakened ; the appetite is nearly destroyed, or it is at least fastidious and unhealthy ; the bowels are either constipated and flatulent, or painfully griped, and slightly purged ; there is headache, or giddiness, with impaired vision ; pain between the shoulders, or in the sides, below the cartilages of the false ribs : now, but especially if the suckling be continued, there is swelling of the ancles, oedema of the face, and frequent palpitation.”

Should these symptoms grow more intense, we have then a severe and well marked case. Particular symptoms not unfrequently attract the principal attention. Impaired appetite is one of these—palpitation another—dimness of vision a third ; yet all are functional, or, at least, are not necessarily otherwise.

Dr. Ashwell next alludes to *occasional complications* of morbid lactation.

1. *Profuse Menstruation, Menorrhagia, and Leucorrhœa.*—There is nothing surprising in the occurrence of these. Dr. Ashwell rather thinks that they prepare the way for organic diseases of the womb.

2. *Functional Amaurosis.*—This, accompanied with congestion of the conjunctiva, is common. The patient is alarmed, yet,—

“ In the greater number of cases, prompt weaning will alone remove the affection : still, it may be necessary repeatedly to apply small blisters near the eye, and absolutely to forbid its employment. Improved diet, country and sea air, exercise out of doors, iron and quinine, are important remedial auxiliaries. Nor is it unimportant that quickly-recurring pregnancy should, if possible, be avoided. I have known several instances where, during a pregnancy immediately succeeding the exhaustion of over-nursing, the eye has been almost constantly in a state of ‘ blood-shot’ or congestion, and the sight excessively imperfect. Months, and even years, sometimes elapse, where able treatment has done its best before

distinct and strong vision is re-acquired. Specks, and slight ulcerations of the cornea, are occasionally connected with the exhaustion and irritability of nursing. In all these cases, provided there be no serious organic change, the sufferer may be encouraged certainly to expect the restoration of this most invaluable faculty."

3. *Jactitation*.—Dr. A. has seen several instances of this. In one poor woman, an out-patient of Guy's Hospital, the seizures always occurred after she had nursed for three or four months; and they were so violent, that she was compelled to lay down her baby when they occurred, lest she should let it fall. In another young and hysterical patient, who had borne children very quickly, there was, during lactation, an almost-continual and slight twitching pretty universally throughout the extremities, but especially of the face. In both, weaning was always necessary before the sixth month, more on account of leucorrhœa and general irritability, than for the jactitation.

4. *Epilepsy* has been noticed as a consequence of lactation, and Dr. Ashwell has seen fits difficult to be distinguished from the epileptic, result from it.

5. *Insanity*.—This commences by peculiarity of sentiment or temper, and "is plainly evinced by pertinacious adherence to an opinion once formed, however erroneous; and scarcely at all more strikingly displayed than in a determined opposition to any advice having for its end an entire or even a partial weaning. In this early stage, the further advance or the protracted continuance of the malady might probably be thus prevented: but, instead of weaning, larger quantities of porter or wine, with animal food, are most improperly resorted to. Still the desired supply is not obtained. The stomach has been already weakened; and as it is scarcely able to bear a diminished diet, fever and indigestion are only apparent and temporary, not real strength, must be the consequence of this increased supply. Together with a continued sparing secretion of milk, the symptoms already described are aggravated. The insanity becomes positive and acute, the pulse quick and sharp, the skin parched, and the whole system deranged. The conduct of the patient is no longer doubtful: her actions are often violent; and, without personal restraint, serious, perhaps fatal injury might be inflicted on herself, and those around her. I agree, however, with Dr. Locock, that the aberration of undue suckling is rarely of this serious kind, excepting where generous diet and wine are injudiciously administered: more commonly it shews itself in weakness and absurd ideas, in whim and caprice. If weaning and careful treatment be even now adopted, the symptoms often subside easily and quickly: while in other cases, where probably a disposition to insanity exists hereditarily, the disease is of longer duration, requiring seclusion and confinement for its cure."

Dr. Ashwell has never known an instance of permanent insanity from lactation. He is satisfied of a resemblance between this and puerperal mania. Both are disposed to recur in after-confinements. In the greater number of examples of puerperal insanity, a modified antiphlogistic treatment only, comprising small local bleedings, cordial aperients, and particularly sedatives, with mild nourishment and tonics, is most successful; and the same may be said of the insanity from over-lactation. But puerperal mania, (and the explanation is obvious) is very much the more frequent.

6. *Undue Suckling may, although rarely, induce organic change in the Brain, Lungs, and Uterus.*

Dr. Ashwell believes this to be a fact. He first alludes to *Headache*. "So long," he says, "as it is general, not very severe and transient—so long as it does not recur periodically, with marked premonitory symptoms—it may be

viewed as comparatively free from risk. But if it be dreaded on account of the permanent uneasiness which it has already produced, or from its intensity and acuteness; if it seize on one part of the head, and remain fixed there; if its paroxysm be preceded by rigors, and if the pain never entirely subsides; more especially if there be partial paralysis, mental peculiarity, or forgetfulness approaching to imbecility; or any other anomalous symptom indicative of deranged nervous action, for instance, an unusual affection of the eye, such as, double or impaired vision; or of the auditory nerve, injuring the hearing, or rendering it excessively and painfully acute; or if there be impeded deglutition; then danger exists, and a softened, or otherwise structurally altered condition of the brain, may be feared. Still, if weaning has not been adopted, it ought yet to be urgently enjoined."

Phthisis may be induced, more particularly if a previous tendency to tubercles existed.

The *uterus* may, he thinks, undergo *organic changes* too.

Treatment.—Where the symptoms of exhaustion are slight, a better diet, a careful regulation of the bowels, a tonic treatment, and, above all, diminished suckling, will often avail. The child should be fed two or three times within the twenty-four hours, and unbroken sleep should be secured to the mother. But a continuance of the debility, or the aggravated prevalence of one or more of the symptoms already enumerated, will plainly indicate the necessity of entire weaning. If the child be purged or become gradually emaciated, it will corroborate the importance of the step.

If organic disease threatens, the treatment must be such as would be appropriate to it. The convalescence of such patients is generally protracted and difficult, years sometimes elapsing prior to recovery. Nor can it be too forcibly recommended, that suckling should be abandoned, if a fresh pregnancy succeed very quickly. The symptoms are often rendered worse by gestation, and invariably by a renewed lactation. Iron, chalybeate waters, country and sea air, travelling and exercise, are most important auxiliaries.

PRACTICAL HINTS ON THE TREATMENT OF STRICTURE. By BRANSBY B. COOPER, F.R.S.

Mr. Cooper, properly enough, disputes the muscularity of the urethra, anterior to the bulb, and the existence of "spasmodic stricture" in that part of the canal. We must say that we never saw anything which could be compared to spasm before the instrument arrived at the bulb. Mr. Cooper indeed remarks, that the error has doubtless arisen from the circumstance, that the phenomena attending sudden obstruction of the urethra are very similar, but not identical, with the contraction of muscular fibre. When a portion of the erectile tissue of the corpus spongiosum is suddenly distended from some morbid cause, in the same manner as the whole of it is naturally distended under venereal excitement, the urethra is partially contracted, as, in the latter case, it is in its entire course; and this contraction, from its suddenness, is attributed to the action of muscular fibre. The fact is, that any cause which produces a partial determination of blood to the corpus spongiosum necessarily produces also a sudden and partial obstruction in the urethra. The fallacy of regarding these obstructions as spasmodic contractions has doubtless been strengthened by the observation, that they are relieved by the same remedies as the latter—by bleeding, purging; by nauseating medicines, the warm bath, &c. But we must repeat that we never saw anything comparable to spasm, save in those parts of the canal which muscle surrounds, and where, indubitably, spasm occurs.

Mr. Cooper dwells, and not more earnestly than the occasion warrants, on the

necessity of combining constitutional means with the use of instruments in the management of stricture. And he is anything but an advocate for force. The object, in his opinion, ought not to be, to force the instrument through the obstruction, but to press it upon it, or into its substance, where the nature of the latter admits of it, so as to alter the action going on in it, to induce inflammation, softening-down, and removal by absorption; in short, to employ, the instrument "*arte non vi*," as was recommended by the great Dupuytren.

"Where the stricture is irritable, as is indicated by its tendency to bleed, and by the peculiar diathesis of the patient, recourse should be had to opiates, the warm bath, and caustic bougies. In cases where a disposition to spasm is observed, bleeding, opium, and belladonna injections will be found useful. Where the stricture, from its thickness, resists the gentle application of bougies, I have been very successful in rendering it permeable by injecting warm water into the urethra from a long canula, to which a syringe is attached; and by careful, continued and gentle pressure with this instrument, I have almost invariably succeeded in effecting a radical cure. In cases of irritable stricture, which I have described above, sedatives should be administered to allay the constitutional irritation; leeches may be applied to the perineum, as also belladonna fomentations, and the *gentle* use of the bougie may be recommended; but should the application of this be followed by bleeding and great pain, a very small piece of potassa fusa may be passed down to the stricture, and will be found to be an almost infallible remedy for the symptoms of irritability."

Mr. Cooper appears inclined to patronize the caustic bougie. We cannot help thinking, however, that the caustic bougie is very rarely necessary. Gentleness, perseverance, and judicious management will triumph over the great majority of strictures.

"The forcible introduction of a catheter or sound into the bladder is only justifiable in a few cases; and never where it cannot be effected without great violence, and without risk of laceration. Where the patient presents severe symptoms of retention, requiring immediate relief, such as great distention of the bladder, great constitutional irritation, and violent pain, an attempt should be made to pass a catheter; and if this instrument can be brought to a right angle to the position of the recumbent patient, and then, and not till then, becomes checked in its progress to the bladder, it is plain that the obstruction is situated at the membranous part of the urethra, where the operator may safely use force, if he apply it judiciously, and by depressing the handle of the instrument: for the risk which would be incurred in other portions of the urethra by such a proceeding is here in a great measure precluded by this portion of the canal being firmly connected to the surrounding parts of the deep fascia of the perineum, and by the instrument itself being here guided and protected in its course by the ossa pubis.

But even in these cases, it is impossible to describe the *degree* of force which it is proper to resort to: language is inadequate to express the infinitely various exigencies of particular cases: the extent to which force should be carried can only be prescribed by the experience and tact of a practised surgeon, who has a perfect knowledge of the anatomy of the parts. Some surgeons would in such cases recommend force sufficient to thrust the instrument into the bladder: but I am confident that this is bad practice, and that it is much safer to cut down upon the membranous portion of the urethra than to risk the laceration of the canal, the perforation of the prostate gland, or the forcing of the instrument into the rectum; for all these are casualties to which violent treaters of stricture are liable; and I have known them to occur frequently. A stricture lacerated by this operation is, moreover, almost certain to recur; nay, to become more impervious than ever, as soon as the instrument is no longer regularly introduced: so that not only are the above risks incurred, but no ultimate good is effected.

In illustration of my views respecting those peculiar circumstances which justify the use of force, I will relate a case in which I preferred adopting this method of relief to an operation. A man was admitted into Guy's Hospital with a stricture, which, from its origin, might be called traumatic; but which in reality was not so, as the accident to which it was to be referred had not caused laceration of the urethra, but only inflammation of the surrounding parts, consequent thickening, and diminution of the calibre of the canal, as from ordinary causes.—I may here observe, that accidental contusion may produce stricture in any part of the canal; while from disease, as has been stated above, it most frequently occurs either in the bulb or membranous portion. The peculiar symptom in this man was the constant dribbling of his water from him; so that he did not appear to be suffering from retention of urine, though, in fact, there were present many urgent symptoms of that state, viz. pain in the region of the bladder, pain in the loins, numbness of the thighs, highly ammoniacal urine containing mucus in considerable quantity. There is no symptom occurring in cases of permanent stricture which more imperatively requires attention than this involuntary dribbling of urine; which, though it precludes the necessity of an operation for the immediate relief of a patient, as in cases of perfect retention, still permits the most dangerous symptoms arising from dysuria to go on slowly, but surely, to the destruction of the patient. Convinced of this, and finding, on a minute examination of my present patient, from the smell of the urine, the distention of the bladder, and the tenderness in the hypogastric region, that the case was more urgent than was apparent on a cursory inspection, I at once attempted to pass a full-sized catheter (No. 8) into the bladder. It penetrated without any difficulty, as far as the posterior part of the membranous portion of the urethra, but there encountered a sudden and definite obstacle to its further progress: to break down this, I used force, to which it at length yielded, and the instrument went into the bladder with a jerk. Now the circumstances which in this case induced me to resort to force, were as follows: In the first place, the patient had so long laboured under aggravated symptoms of permanent stricture, that his state was already very precarious. Secondly, though the actual retention of urine was not, as usually happens, the most urgent symptom, a free passage into the bladder was nevertheless indispensable to his cure. Then, again, the prostate gland was healthy, as was proved by examination *per rectum*, and the position of the obstruction was favourable to the application of force; for, guided by the forefinger of my left hand in the bowel, and making the deep fascia of the perinæum a fulcrum for the instrument, I was enabled to direct the latter with precision into the bladder, and at any rate, with as little danger as would attend the cutting into the membranous portion of the urethra, or the destruction of the stricture by caustic; one or other of which modes of relief I must otherwise have had recourse to. I hold, then, that where the symptoms are urgent, and the stricture is situated posteriorly to the deep fascia of the perinæum, force may be employed with propriety; but that where the stricture is at the bulb, though the symptoms are not more severe, an operation should be performed. In such cases as I have just described, however, force, as has been before observed, should only be used to the degree which the experience of the surgeon forbids him to exceed: where it remains without effect, and delay is admissible, warm baths, enemata, bleeding, or opium with small doses of tartarized antimony, may be tried as constitutional remedies, together with such local means as injection of solution of belladonna, or friction with mercurial or iodine ointment. Where the symptoms are urgent, and the surgeon, even after these pharmaceutical remedies, again attempts in vain to pass the catheter—always recollecting that much less force should be employed where the stricture is situated anteriorly to the membranous portion than in strictures of that region itself—he should immediately propose the operation of opening the membranous portion of the urethra."

Mr. Cooper advises this to be performed in the following manner. The patient being placed in the same position as for lithotomy, an incision, about two inches long, is to be made in the raphe of the perineum, dividing the superficial fascia. After the incision has been made, the second step of the operation is to pass the forefinger of the left hand into the upper part of the wound, directing it towards the arch of the pubes; when the urethra will be readily felt, especially if the patient be desired to strain, as in the attempt to make water. An incision is then to be made into this distended and fluctuating canal; through which opening, a female catheter is to be passed into the bladder, and the urine drawn off.

"The question now arises, in what manner a complete cure is to be effected. This depends upon the situation of the stricture. If, as is usually the case, it is behind the scrotum, the following means should be employed. The urine having been drawn off, as described, through a female catheter, a male catheter should be passed through the penis down to the stricture: its point should then be felt for, with the finger, in the incision which has been made in the perinæum; and will be perceptible through the thickness of the stricture, the distance between it and the finger being, of course, the depth of the adventitious growth which constitutes the stricture. This must next be divided by the knife; and the male catheter may then be passed on into the bladder, through the opening which had been made for the introduction of the female catheter. The instrument is afterwards to be kept in the bladder, and the patient put to bed. I decidedly recommend that the catheter should be left in the bladder, though this practice has been condemned; for without it, the divided stricture would certainly close again, and become more permanently firm than ever, the urine would be extravasated into the perinæum, and the patient would be subjected to these additional sources of irritation, if nature did not convert the perinæal opening into a permanent fistulous passage, which is sometimes effected by the formation of a new mucous lining, admitting the passage of the urine with impunity. Where the stricture is situated in the penis anteriorly to the scrotum, it is not safe to divide it with a knife, from the difficulty of afterwards closing the wound: and therefore it is better, in that case, only to draw off the urine through an incision in the membranous part of the urethra, by means of the female catheter, and to treat the stricture afterwards by passing bougies, in the same way as where immediate relief is not required."

CASES OF EXCISION OF THE ELBOW JOINT. By C. ASTON KEY.

Mr. Key has performed excision of the elbow-joint in three cases. The first case was detailed in the first volume of the Reports. It succeeded in a great degree. The two present cases have been fortunate, and are calculated to encourage resort, in proper circumstances, to the operation. Mr. Key observes:—

"The most favourable cases for the operation, so far as my limited experience has gone, appear to be those in which the disease has had its beginning in the articular surfaces. The substance of the bones is usually sound, and a healthy granulating process quickly follows the excision of the diseased surfaces. If the ulceration has spread from the cancelli to the articular cartilage, a sound surface cannot be ensured by the saw; and the healing of the parts is slow, or retarded by repeated exfoliation of small pieces of bone.

Hence the operation will probably succeed better in the adult than in the young subject. In the latter, articular disease often, probably in most cases, arises in the texture of the bone beneath the articular cartilage; and spreads by ulceration towards the cavity of the joint, which it opens and renders the seat of an acute suppurative action. The extent of disease in the bone is not easily defined, and the cut surfaces will probably not be in a perfectly healthy condition. The

state of constitution, too, that gives rise to disease of bone, is unfavourable for an operation, much more so than the lowest cachexia induced by simple joint-disease. In regard to this operation upon children, however, I have no experience to offer, as I have hitherto performed excision upon adults only : but even viewing the operation as less promising in the young, I should not hesitate to perform it on a child, in lieu of amputation.

The disease for which the operation is required, begins not unfrequently in the lesser sigmoid articulation of the ulna on the head of the radius, from a twist or strain of the fore-arm acting on the coronary ligament. In the early stage, rotation is the motion most limited ; and the other signs of inflammation are confined to the radial part of the joint. The larger cavity of the ulna next becomes the seat of morbid action ; and gradually the whole surface of the joint is involved."

The cases themselves do not seem to require insertion.

THE HISTORY OF A GUN-SHOT WOUND, IN WHICH THE PATELLA WAS CARRIED AWAY, AND THE KNEE-JOINT COMPLETELY LAID OPEN : SUCCESSFULLY TREATED BY MR. WARD OF HUNTINGDON.

On the evening of Nov. 2, 1838, Mr. Ward was called to Mr. E. M. who had received a gun-shot wound from a fowling-piece in the right knee. Mr. Ward met Mr. Abbott, surgeon, of Cambridge.

"The contents of the gun had struck the patella on the outside of the knee, carrying away the whole of that bone, except a small, solid, triangular, portion which still remained attached to the ligament : there was a nearly circular wound of the integuments, completely exposing the joint, and sufficiently large to admit my whole hand into the joint between the tibia and femur ; but the cartilages of those bones appeared uninjured."

The consultants determined to attempt to save the limb. The patient was placed on his back, with the knee slightly flexed : a large poultice applied to the wound, and a full dose of opium given. No unfavourable symptoms, either local or constitutional, occurred during the progress of the case, nor was his pulse even in any degree accelerated. An anodyne at bed-time for a few nights, and occasional aperients, were the only medicines required. Poultices were continued until granulations began to arise ; after which (the remaining small portion of patella having been removed) the surface was dressed with lint dipped in oil, and strips of adhesive plaster were applied in various directions, to assist in approximating the edges of the wound. On the 21st of Jan. 1839, the wound being quite healed, Mr. M. was able to dress himself, and sit up in a chair. In a short time, with the aid of a suitable splint and bandage, he went upon crutches ; and in the middle of March, he rode to Mr. Ward's house, six miles, on horseback. The cicatrix is now firm, and there is considerable motion of the joint ; so that Mr. M. can not only walk well without a stick, and even run without much inconvenience, but in November last Mr. Ward saw him dancing quadrilles at a ball.

Mr. Bransby Cooper appends some observations to this case. Among others, he makes the following :—

"As a joint, whose physical and functional characters have been altered by disease, may be exposed and partially or wholly removed with impunity, so would recent experience appear to encourage the expectation that, after an articulation has been laid open by violence, nature, aided by judicious treatment, may speedily produce such an alteration in its conditions, as shall prevent, or at any rate diminish, that excessive and almost fatal degree of constitutional irritation which has generally been considered the inevitable consequence of such lesions. In the cases of extensive wounds into joints, nature does not seem to

attempt to close the synovial capsule by adhesive inflammation and thus reconvert it into a closed secreting membrane; but a granulating surface shuts up the wound into the articulations, and the joints are soon placed in a very similar condition to one which, after having been the subject of a violent inflammatory action from disease, is progressing towards a favourable termination.

In punctured wounds, the same action does not seem to follow; but the synovia continues to be secreted, oozes from the wound, intercepts nature's efforts at reparation, and induces a high degree of inflammatory action, which frequently leads to suppuration and death. In the latter cases, also, there is not the same degree of prostration as where an extensive wound lays upon a large joint, which accident is generally followed by faintness, almost approaching to collapse,—a condition most favourable, and likely to prevent subsequent high inflammatory action, by allowing the membrane, when in a passive state, to be submitted to the influence of external and apparently noxious agents.

The high degree of constitutional irritation which follows the infliction of a small punctured wound into a joint may also, in some measure, be attributable to the absence of that alarm which is created by a large wound; so that the same precautionary measures, rest and remedies, are not had recourse to. This supposition seems verified by the fact, of the operation for the removal of loose cartilages from the synovial membranes being safely performed by skilful surgeons;—skilful, I mean, not only in the manipulation employed for the removal of the extraneous substance, but also in the judicious preparation of his patient."

Much of the danger, we fancy, of punctured wounds of joints results from the liability to suppuration, and to the matter when formed being *shut up*. In large wounds of the articulations this can hardly occur. We feel disposed to doubt the influence of the primary shock in preventing inflammation. Mr. Cooper's remarks are deserving of attention.

CASE OF DISLOCATION OF THE SHOULDER-JOINT, WITH FRACTURE OF THE HUMERUS. In Sequel to Sir Astley Cooper's Paper on the same subject.
By J. A. HINGESTON.

Mr. P—, aged 63, of a spare habit, and in declining health; the muscular structure being slender and feeble, slipped down some cellar stairs. He fell with the left arm stretched out, and at the same time received a blow on the back of the humerus; by which violence, it would seem, the arm was knocked forward; while the head of the bone was pulled backwards by the scapular muscles, the scapula itself being the fulcrum. The head of the humerus was in this manner at once both fractured and dislocated, the fracture traversing the anatomical neck of the humerus.

Signs.—A falling down of the left shoulder; empty glenoid cavity; arm close to the side; the patient supporting the elbow of the injured arm in the opposite hand; the palm of the hand of the injured limb lying flat against the stomach (half-supine). On looking at the patient a short distance off, there was a visible protuberance under the clavicle, elevating the pectoral muscles; the axis of the limb, however, not being that of a dislocated shoulder. On examining the shoulder by touch, the head of the humerus was easily perceptible to the fingers of the operator, both under the clavicle and in the axilla. By placing the knee under the axilla, and making the usual extension for reducing dislocation, the operator, while in the act of pressing down the elbow, felt the grating of a fracture under the hand that grasped the shoulder-joint. Then, by grasping the shoulder and dislocated head of the humerus with the fingers of the one hand, and at the same time (the knee being still in the axilla) grasping the

elbow with the other hand and jerking the shaft of the humerus upwards and outwards, the grating of the fracture became perceptible, frequent, and unequivocal. On the operator removing his hands and not interfering the least with the injured limb, but steadily looking at it in front, he could observe (as the patient was very thin) a manifest incongruity between the site of the dislocated head and the axis of the pendulous shaft of the bone. On searching at the top of the bone close to the dislocation and fracture, the fingers of the operator could be slipped into the fissure caused by the fracture between the separated ends of the bone.

The *treatment* was simply that of supporting the limb in a sling; and of the application of poultices, fomentations, &c. to assuage pain.

As the case proceeded, there was to be remarked a difficulty of supination and extension of the fore-arm, an inability to raise the elbow from the side, and a partial filling up of the glenoid cavity. At this period (Dec. 16th) there were all the signs of simple dislocation, with fixture of the fore-arm at a right angle across the body. The case might readily be taken for one of unreduced dislocation. On the 21st of December, the condition of the limb was as follows:—

First, The head of the humerus was broken off, and lying under the outer end of the clavicle in front of the coracoid process of the scapula.

Secondly, The glenoid cavity was empty, but somewhat filled up anteriorly by the head of the humerus resting on the anterior edge of the articulating cup.

Thirdly, The fractured end of the shaft of the humerus was touching the under edge of the articulating cup, and lying in juxta-position to the head of the humerus, but at an obtuse angle with it.

Fourthly, A line was running visibly between the top of the shaft of the bone and its head, with a perceptible depression between the two separated portions of bone, shewing the nature of the injury unequivocally.

Fifthly, Coagulable lymph had been thrown out around the injury, but was in progress of absorption.

Sixthly, The belly of the biceps muscle was attenuated, the muscle itself being disabled. It was this disability of the biceps muscle which was the cause of the inability in the movements of the fore-arm.

There was no union between the fractured head and shaft of the bone, and from the limited play of the humerus on the lower edge of the glenoid cavity, a false joint seemed in process of formation.

On Jan. 23d, 1840, three months after the injury, the patient died.

Dissection of the Limb.—Beneath the deltoid, the humerus close to the neck was found to have been broken into six pieces, and united by new bone. The glenoid cavity was seen empty, and covered with its cartilage; the axis of the limb being directed towards it. The head of the humerus was felt beneath the glenoid cavity, resting on the inferior costa, just below the cervix scapulæ, with its articulating surface directed downwards. It was closely invested by its capsular ligament, which was entire; the breach caused by the dislocation having been repaired. On opening it, the head of the bone presented its usual appearance, retaining its cartilage, and being smooth and polished. The tendons of the spinati and subscapularis appeared thickened; but were entire, as if they had been torn and repaired. The long tendon of the biceps was torn from its origin, and entangled among the fragments of the fracture, above which it could not be traced.

The motion enjoyed by the articulation was very limited, being restrained by a process of union going on between the glenoid cavity and a fragment of the humerus lying in contact with it. This union was chiefly by means of an imperfectly ossified matter, and therefore allowing a slight degree of motion. This union might probably have been prevented by a continuance of passive motion.

CASES AND OBSERVATIONS ILLUSTRATIVE OF RENAL DISEASE ACCOMPANIED WITH THE SECRETION OF ALBUMINOUS URINE. Memoir the Second. By R. BRIGHT, M.D. F.R.S. Physician Extraordinary to the Queen.

The main object of Dr. Bright in writing the present paper is to correct a misconception of which he complains—namely, that he maintains the occurrence of albuminous urine to be always and necessarily connected with that organic disease which, in its various shapes and modifications, has been so fully described. "Now the truth is," he adds, "that I have never written upon the subject without studiously stating the contrary opinion, and declaring that I considered the disease, in its commencement, entirely functional." He quotes passages in corroboration of this statement from his first publication in 1827, from his second in 1831, and from a third memoir in 1836.

"After these quotations, I trust I shall be exonerated from the imputation of asserting, that albuminous urine cannot exist without disorganization having taken place in the kidney. At the same time, it must be confessed, that within a very limited time after the occurrence of the morbid condition of the urine the disease has generally proceeded so far as to bid defiance to the best-concerted measures for its removal, and has probably begun to produce a structural change in the organ."

In the present communication, Dr. Bright has brought forward a few cases, which, he thinks, may assist us in forming a fair estimate of the degree of success which we may reasonably expect to attain in the treatment of albuminous urine; sometimes effecting complete cures; sometimes diminishing the morbid condition of the secretion; but more frequently only rendering the various symptoms less formidable, and the fatal result less immediate. For, no one, he believes he may say, has it in his power to adduce a long series of perfectly successful cases, though relief is frequently afforded, and results produced such as many have considered cures. Although few of them, says Dr. Bright, deserve that designation, they are calculated to afford some comfort and encouragement while we are engaged in the hitherto discouraging search after efficient remedial agents when the disease has assumed its confirmed form, and to excite a hope of being useful amidst the still more distressing disappointments to which we must submit when the disease has become organic.

Dr. Bright details, with considerable circumstantiality, twenty-four cases. These occupy some fifty pages of the "Reports." It would be useless on our part going through each, but their general tenor, the facts they prove, and the conclusions that they point to, may, in some measure, be gleaned from their respective headings, a kind of abstract of their characters. These we shall cite, and then notice two or three more fully.

CASE 1.—Exposure to Cold—Albuminous Urine—Anasarca—strict confinement to bed—diaphoretics—elaterium—permanent cure.

CASE 2.—Albuminous Urine—Ascites and Anasarca—warm bath—purging—mineral acids—complete cure.

CASE 3.—Albuminous Urine—Anasarca—confinement to bed—simple salines—all symptoms removed.

CASE 4.—Albuminous Urine—treated by compound ipecacuanha powder, &c. &c.—great improvement during many years—urine still coagulable.

CASE 5.—Anasarca after Scarlatina—urine albuminous—complete cure by confinement to bed.

CASE 6.—Albuminous Urine after Scarlatina—strict confinement to bed.

CASE 7.—Albuminous Urine—Anasarca—bleeding—gentle purging—light tonics.

CASE 8.—Albuminous Urine after Scarlatina—excessive anasarca—death—mottled kidney.

CASE 9.—Albuminous Urine, recent Case—strict confinement in bed—purgatives and antimonial diaphoretics—anasarca cured—urine still albuminous.

CASE 10.—Albuminous Urine, a recent Case—strict confinement to bed—antimonials—anasarca cured—urine still slightly albuminous.

CASE 11.—Albuminous Urine—general anasarca—bleeding—elaterium—anasarca cured—urine remained very slightly albuminous.

CASE 12.—Albuminous Urine—confinement to bed—bleeding—elaterium—great relief—urine still slightly albuminous.

CASE 13.—Albuminous Urine—bleeding—much relief from gentle diuretics and purgatives—urine still slightly albuminous.

CASE 14.—Albuminous Urine—anasarca—infus. digitalis, &c. &c.—anasarca cured—urine still coagulable.

CASE 15.—Albuminous Urine—elaterium—great improvement.

CASE 16.—Albuminous Urine—elaterium—great relief.

CASE 17.

CASE 18.—Albuminous Urine—severe cramps—serous effusion.

CASE 19.—Albuminous Urine during at least two or three years—habitual cramps—death, with violent spasm of the muscles—urea in the serous fluids.

CASE 20.—Albuminous Urine—severe epileptic fits—death.

CASE 21.—Albuminous Urine—very defective vision—spasm—coma, with death.

CASE 22.—Albuminous Urine, probably of several years' duration—very defective vision—inflammation of pericardium from exposure—convulsion—death.

CASE 23.—Albuminous Urine—imperfect vision, and other cerebral symptoms—serous inflammation—phosphatic deposits in one kidney.

CASE 24.—Albuminous Urine in a case of diabetes mellitus.

The titles of the preceding cases furnish a sufficient notion of their general character, and present the practitioner with an idea of what he may commonly expect in the treatment of albuminous urine. We shall now take one or two of the more striking, and especially of those which seem to illustrate the beneficial effects of remedies.

We shall begin with,—

CASE 1.—*Exposure to Cold—Albuminous Urine—Anasarca—Strict confinement to Bed—Diaphoretics—Elaterium—Permanent cure.*—Feb. 5, 1837. Dr. Bright saw a gentleman, aged 35, of good constitution, who, eight days previously, the weather being very cold, came from Maidstone on the outside of a coach; and on the same evening his wife observed that his face was swollen, and he complained of some pain in the loins. The swelling has since continued and increased, shewing itself in various parts of his body. His skin was dry, except the palms of the hands and soles of the feet; the urine scanty, with lateritious sediment: on the application of heat, it first became clear, and then coagulated freely. A third of a grain of elaterium, given the day before, had somewhat reduced the anasarca.

He was ordered to remain strictly confined to bed, in a warm room; to have a light milk diet; and to take a pill composed of three grains of James's powder and two of extract of conium, three times a day; and a draught, containing three drachms of the liquor. ammon. acet. He was also to repeat the elaterium about once a week.

Next day he had a profuse perspiration, which was succeeded by a permanent moisture of the skin. On the 8th, pulse 80, full: urine, two quarts, of a high brandy colour, and slightly dingy, but free from lateritious deposit: still decidedly coagulable by heat, but in a less degree than before. He was allowed a little vegetables and a small quantity of fish. To take the third of a grain of elaterium the next morning, and continue his other medicines.

Feb. 20. The perspiration has been almost constant, and he feels weakened by it. For the last few days, the urine has deposited a slight brown sediment, apparently from the presence of some of the red particles of the blood. To leave off the James's powder, but continue the other medicines.

March 6. Up to this time, no alteration has been made in the plan of treatment; except that a little sulphate of magnesia has been added to his draught, and the James's powder has been resumed. He feels and looks quite well; but the urine is too abundant, and he is called upon two or three times each night to pass it. It looks pale and watery, and has a slight dingy appearance; but is not the least coagulable by heat. The perspiration is now rather deficient. Twenty minims of the liquor. antim. tart. : to be added to each dose of the mixture, and the pill to be continued.

March 13. In appearance, he is now quite well, though the urine has still a slight dinginess. The quantity is natural, and it is not the least coagulable. Skin perspirable.

Dr. B. now took his leave. The gentleman has remained quite well since.

The *Second Case* was that of a man, aged 56, a coal-whipper, who had always enjoyed good health and equally enjoyed both gin and porter. The anasarca and ascites had begun eleven days before his admission. The treatment consisted of active purging, which diminished the ascites, but not the anasarca—hot baths which made him sweat, as we may presume only coal-whippers can, for the perspiration is described as "running through the bed, and standing in puddles on the floor,"—and, lastly, infusion of gentian with the hydrochloric acid. Dr. Bright remarks on the case:—"if it were allowable to speak of our mode of curing the disease from the success of a single case, we should be induced to say, act freely on the skin, lower action by purging, then improve the tone of the kidney by the mineral acid, and the cure is complete: and though I am not, as I have said, sanguine of great success, yet these appear most rational indications, and are, I believe, capable of being frequently carried into effect, if the patient will submit to confinement to bed for many weeks, during the action of remedies."

The next case, to which we shall turn is the *fourth*, because it is, we think, a sample of a class far from uncommon.

CASE 4.—Albuminous Urine—treated by Compound Ipecacuanha Powder, &c. &c.—Great Improvement during many years—Urine still coagulable.—"March 9, 1835. A man, aged about 25, pale and scrofulous in appearance, and deeply pitted with the small-pox, came to me, labouring under anasarca, and having albuminous urine. His illness commenced, as far as he knew, eight months before, with a diarrhoea, which lasted three weeks; and, when getting better, he went into the country for a month; but there his legs began to swell, and anasarca proceeded up the thighs and abdomen. He had been taking various remedies for the last four or five months, without deriving material benefit. I found the urine of a pale straw-colour, exceedingly coagulable by heat and by nitric acid: it became frothy on agitation, and remained so. The whole quantity he passed was very considerable, and he suffered much from irritation of the bladder, so that he was always obliged to rise three or four times during the night."

Extracti Humuli. Extracti Uvæ Ursi ãã gr. xv. contunde et in pilulas decem divide, e quibus sumat unam ter quotidie.

Milk diet. Flannel.

On the 23rd, the urine less coagulable—only one call at night—cough, and relaxed bowels.

℞. Sodæ Subcarbonat. ʒij. Pulv. Uvæ Ursi ʒij. Pulv. Ipecac. Comp. ʒss. in pulveres xij. divide, e quibus sumat unum ter quotidie.

Habeat Mistura m Cretæ aromat. pro re natâ.

On the 17th of April, the skin being dry, he was ordered 4 *grs.* of *Dover's*

powder twice or thrice daily, which was soon increased to five grains thrice daily.

In June, he had improved, but a slight periosteal enlargement had appeared on his left shin; he had taken much mercury. The iodide of potassium in infusion of cascarrilla was added to the Dover's powder. On the 9th July, he was ordered—

Pulv. Ipecac. Comp. ʒj. Soda Carbonat. ʒij. Pulv. Uvæ Ursi ʒij. In pulv. duodecim divide, e quibus sumat unum omni nocte.

Infus. Gentian. C. ʒv. Potassæ Hydriod. ʒiss. Tinct. Aurant. ʒiij. Tinct. Card. Comp. ʒiij. Syrup. Aurant. ʒij. Sumat cochl. mag. i. ex cyatho aquæ semel vel bis quotidie.

Passing over some intermediate reports we may cite the concluding ones.

"Oct. 30, 1839. Nearly four years had elapsed since I last saw this patient; and he now came to me, telling me that he had continued in good health till within the last two or three months; but when he had occasionally felt some of his old symptoms, he had recurred to the mixture. He had passed his time in the comfortable discharge of his business; had experienced no swelling; his skin natural, and his urine not more frequent nor in larger quantities than usual: at present, however, he suffered from frequent calls to pass it after going to bed; and on rising in the morning, he had headache, with frequent nausea, proceeding often to vomiting. I had no opportunity of seeing his urine at that time. —I ordered an effervescing draught occasionally.

Nov. 3. I examined his urine; it was not acid, and became very faintly opaque by heat; it coagulated freely with nitric acid: specific gravity 1012. He passed a large quantity of urine at night, but little in the day: his ankles had swollen slightly of late."

We give this case, as we before observed, because it may be loosely said to represent a class. It is by no means rare to see persons go on for year after year with albumen in the urine, more or less irritability of the bladder, a tendency to anasarca, and indifferent, rather than positively bad health. We fancy that it is the quantum of disease in the kidney, rather than the influence of particular medicines, that enables the patient to creep on thus little better or worse for an almost indefinite time. We have, at all events, seen this occur under very different remedies, and regimen and the avoidance of the causes of disease have, perhaps, had as much to say to it as physic.

Albuminous Urine in connexion with Scarlatina.

Dr. Bright remarks:—

"During the autumn and winter which have just passed (1839-40), we have experienced an almost epidemic prevalence, in London and its neighbourhood, of that anasarca with albuminous urine, which has been long known to accompany or follow scarlatina. The attack of the original disease has often been slight; the rash sometimes scarcely perceived; the sore-throat often mild; and the affection of the urine has frequently shewn itself while the rash or sore-throat has still existed. Hæmaturia has occasionally occurred during the severity of the attack; but more commonly this symptom, with or without anasarca, has followed on the subsidence of the fever, or during the early convalescence. The number who have offered themselves as out-patients, or have been admitted into the wards of Guy's Hospital, under such circumstances, as well as the cases which have occurred in private practice in other parts of London, have been quite unprecedented, within the limits of my experience.

This I consider one very important form of the disease, and one which very generally admits of cure; but I have seen and heard of several fatal cases, and have had the opportunity afforded me of examining the kidneys of some who have died. In some instances, there has been obvious irregular congestion, with-

out apparent lesion of structure; but in one or two, where there was reason to believe that a foundation had been previously laid, the more usual appearances of advanced structural derangement have been ascertained.

With regard to the occurrence of albuminous urine after scarlatina, I have already said, in a former paper in these Reports,* that I consider it as often laying the foundation for the future disease, or as an evidence of the strong tendency existing in the constitution, even when the cure has been apparently complete."

Four cases are detailed. The three first terminated favourably, and as there was nothing particular in the treatment, nor indeed in the circumstances, we may dismiss them. The fourth, however, has pathological interest at all events.

CASE.—Albuminous Urine after Scarlatina—Excessive Anasarca—Death—Mottled Kidney.—John Wiseman, aged 16, admitted November 16, 1839. He has always enjoyed a good state of health till about a month ago, when an eruption of scarlet-fever made its appearance on the body. During the attack he continued to be engaged in the discharge of his duty, frequently exposing himself to damp and cold by going into the cellar. A medical gentleman, who attended, said he had scarlatina. A fortnight ago, he perceived a swelling about the eyelids, which increased considerably towards evening, attended by pain and giddiness in the head: the next morning, the swelling had extended to the face; and in three days more, to the upper and lower extremities, scrotum, penis, and abdomen. At this time he complained of sickness and trembling of the limbs, accompanied by coldness of the feet: his urine was small in quantity.

Present Symptoms.—Has a general œdema over the body, with great tension of the skin, more strikingly marked in the abdomen, scrotum, eyelids, face, and lower extremities: great thirst: pain in the loins on pressure: skin dry and hot: tongue furred and injected: respiration hurried and laborious: urine of a dingy orange colour, small in quantity, very coagulable by heat and nitric acid. He was ordered to be freely purged by elaterium and supertartrate of potash; but this produced great sickness, without better action on the bowels.

Nov. 17. Has had no sleep: constant vomiting: pulse 114, small and sharp: skin dry: respiration hurried and laborious: tongue somewhat brown: pain in the head: has passed six ounces of urine, the same in character: great thirst, and pain in the loins: cannot lie down.

Baln. tepid.

Hydr. \bar{c} Cret. gr. v. t. d.

Acid. Hydrogen. ex M. Mag. t. d.

18. Has passed a very restless night: pain in the loins undiminished: great pain and tension in the scrotum: the skin burning: œdema remains the same: urine very scanty, and coagulable.

Incidatur scrotum.

V.S. ad $\frac{3}{4}$ x.

Fot. Papav. lumbis.

Only $\frac{3}{4}$ iv. of blood could be obtained; which was buffed, and of a light colour.

19. Died.

SECTIO CADAVERIS.—The whole body much swollen, and anasarcaous. The right ventricle contained a small quantity of fluid.

Chest.—The right pleura contained about a pint of clear serum; the left about eight ounces of dark-coloured serum. The lungs were only compressed from fluid. The cavity of the pericardium contained three ounces of straw-coloured

* Vol. I. p. 339.

serum, mixed with a few flocculi of albumen. There were evidences of inflammation of the peritoneum. The liver was congested.

Kidneys of their natural size: tunics adherent; the cortical portion much mottled with white deposit, so that everywhere it appeared of a whitish colour; the tubular portions natural. The other viscera healthy.

Dr. Bright rather regrets that he did not bleed earlier. We lately saw a case which was rather interesting. A young gentleman was observed by his friends to grow languid and rather puffy about the face and ankles. Yet they thought little of the circumstance, until the swelling of the face had increased, and the boy was evidently ill. Six weeks had passed from the first manifestation of anasarca when we were consulted respecting him. The anasarca was general, and, in the lower limbs rather considerable—there was ascites with some tension of the belly—some dyspnoea, without evidence of thoracic implication—and scanty urine, loaded with the lithates, and coagulable. The child was of a delicate and scrofulous habit, had always been ailing, and had so little pulse that we hesitated to bleed. There was slight tenderness of the abdomen, but it seemed due to the tension of the skin, for equal tenderness was felt in the nates, and the lower limbs. We ordered leeches to the belly, and salines with the infusion of digitalis and purgatives. But the child rapidly grew worse, the anasarca increased, coma set in, and in three or four days he died. We supposed that the kidney was affected, as the symptoms rather pointed to that than to any other organ of consequence. The fact, however, was otherwise. For, on dissection, the kidneys were sound, no congestion, even, of consequence existing in any part of them. The thoracic organs were sound also. The disease consisted in inflammation of the peritoneum, in the cavity of which was a good quantity of turbid serum, with flakes of lymph, and even purulent deposit in dependent parts or corners, such as the pelvis, interstices between the intestinal convolutions, &c. We certainly *did* anticipate increased vascular fulness about the kidneys, and we *did not* anticipate so *much* inflammatory action about the peritoneum. We fancy, if the truth were told, that there are few persons in any practice, whether public or private, who have not occasionally found more inflammation of a serous membrane, after death, than they had bargained for during life. Such inflammations not unfrequently come on slowly and insidiously, both in the chest and the abdomen.

To revert to albuminous urine, in connexion with scarlatina, Dr. Bright remarks:—

“ Mr. Streeter kindly permitted me to see the kidneys of a child who died this winter under the form of disease of which we now speak, but in which no permanent change had taken place: the evidences of congestion, and more particularly in the tubular portion of the kidney, were most marked.

In a case of a child seven years old, which Mr. F. Toulmin had an opportunity of examining, one of the kidneys was mottled, and the capsule adherent.”

Two cases are detailed with the view of exhibiting the effects of antimonials. We shall select one.

CASE 10.—Albuminous Urine, a recent case—Strict confinement to Bed—Antimonials—Anasarca cured—Urine still slightly Albuminous.—William Arnold, aged 16, was admitted, under my care, into Guy's Hospital, Sept. 2, 1835, with general anasarca. A fortnight ago, during the very hot weather which then prevailed, he had been exposed to some rapid alternations of temperature; and on awaking one morning, found his face swollen: shortly after, his ankles and other parts of his body began to swell. He experienced aching pain in his loins; and his urine became red or brandy-coloured, and was deficient in quantity.

At the time of his admission, pulse 84, urine dingy and turbid, sufficient in quantity, but very coagulable by heat, forming a complete curd-like mass.

I ordered him to go to bed, and remain there; and gave him the liquor. ammon. acetatis, with solution of tartarized antimony, every fourth hour.—Milk diet.

The following day he was cupped from the loins, to twelve ounces; and took a brisk purgative.

Sept. 4. The skin continues dry; face more swollen; pulse 84; lumbar pain relieved by the cupping. He speaks of a palpitation of the heart, to which he has been occasionally subject all his life, but which has increased within the last few days.

Extract. hyoscyami gr. iij. Antimon. Tartariz. gr. ʒ, fiat pilula ter quotidie sumenda."

He improved, and, on the 18th, the antimony was increased to the 4th of a grain every six hours. Giddiness occurring, the henbane was omitted on the 22d of October. On the 7th of November, he is described as feeling himself in perfect health. He was ordered to take five grains of subcarbonate of ammonia three times a day, and leave off his other medicine.

He continued in the hospital till the 23d; when he felt so well, that he chose to return to his occupation. His urine still shewed very slight signs of albumen. He had experienced no return of the anasarca, though he had been walking about the ward, and had frequently been down stairs for the last fortnight: his pulse, however, was still very irritable.

Two cases are given for the purpose, apparently, of shewing the effects of bleeding and elaterium. We shall cite one.

CASE 11.—*Albuminous Urine—General Anasarca—Bleeding—Elaterium—Anasarca cured—Urine remained very slightly Albuminous.*—David Neville, middle-aged, a river-side porter, accustomed to drink, admitted April 5. A fortnight ago he was quite well, except a slight cough: about that time general anasarca came on, first in his legs and thighs, then in his face: his urine is very scanty, less than half-a-pint in twelve hours; dingy; coagulable: pulse 84, labouring: he complains of some pain in the loins: no head-ache. He was bled immediately to fourteen ounces, and had his bowels opened: the quantity of urine gradually increased, and became abundant in ten days' time; but he remained in the hospital till the 4th of June, subject to relapses of the swelling; and when he left the house, his urine, though less coagulable, still became opaque by heat.—The treatment adopted was chiefly bleeding and purging; he was bled three or four times, and cupped, and the blood was buffy; and the elaterium, given in doses of one-eighth of a grain till it purged, was the most effectual purgative; he also took some diuretics at different times, and thought the decoction of pyrola the best.

The *fifteenth* and *sixteenth* cases are offered as samples of treatment by elaterium.

The *sixteenth* case is a pretty good example of the good effects produced by it.

CASE 16.—*Albuminous Urine—Elaterium—Great Relief.*—C. Hellyer, aged 40, admitted Sept. 25, 1839, a man of a pale and leucophlegmatic appearance, whose occupation was that of a leather-dresser, being constantly exposed to wet and cold. His history is the following:—twenty years ago, had a slight attack of dropsy in the face and head: was cured by cupping. Ten years ago, had another attack, more severe than the former. Three years and a half ago, had another attack, which lasted for six weeks. Five weeks ago the present illness commenced, for which he has taken medicine ineffectually. His skin had always been dry.

At present, the scrotum, thighs, legs, and all depending parts, are much swollen, from anasarca: the eyelids are also swollen: skin hot and dry: urine

very scanty, of a dingy colour, and decidedly coagulable by heat: he is also called upon in the night four or five times to pass it: he states that in health he makes very little urine, and has frequently remarked its dingy appearance. He was ordered the following medicine:

Julep Ammon. Acet. \bar{c} Vin. Antim. t. d.

P. Guaiaci gr. v. Pulv. Jacobi gr. ij. t. d.

and ordered to keep his bed.

Sept. 26. Pulse much better: states that he has passed a quart of urine in the night, of the same character.

30. Pulv. Elat. Comp. gr. xv. st.; et. rep. cras mane, si opus fuerit.

Oct. 2. His bowels were opened twelve times by the elaterium: stools watery and copious: he feels greatly relieved by its action: the swelling in the scrotum and face is greatly diminished, and the skin feels more perspirable: urine the same in every respect. The elaterium was repeated on the 8th, 12th, 16th, and 22nd of October. On the 20th, the report states that the swelling has disappeared from all parts: skin soft and perspirable: urine of a dingy colour: called upon in the night five times to pass it, and in large quantities; coagulable by heat. On the 26th, he felt so well, that, contrary to advice, he left the hospital. Every time he took the elaterium, he experienced the most marked benefit.

The *fourteenth case* was treated by infusion of digitalis, to shew the effects of which we shall cite it.

CASE 14.—*Albuminous Urine—Anasarca—Infus. Digitalis, &c. &c.—Anasarca cured—Urine still coagulable.*—Drusilla Wilson, aged 56, admitted, December 11, 1830. She stated that her present illness began two months ago, with loss of flesh and strength; and about a month ago her lips began to swell. At the time of her admission, her legs were very much distended with œdema. Pulse 120, sharp, with some degree of jerk; bowels open: urine scanty and coagulable.

Infus. Digital. 3i. ex Misturâ Camphoræ, ter die.

Dec. 12. Urine about $1\frac{1}{2}$ pint, which she thought a considerable increase: pulse 100, and more natural.

Rep. Medicamenta.

On the 4th Dec. swelling nearly gone: urine above four pints in twenty-four hours, and not at all coagulable: pulse 88.

On the 7th, she was ordered steel wine thrice daily. At the latter end of the month she contracted a catarrh from the severe weather, which seems to have thrown her back, for we find, on the 8th Feb. urine still decidedly coagulable; but she says she feels quite well, except an occasional pain in the loins; and she wishes to return to her family. We should state that the uva ursi and soda were tried, apparently with disadvantage.

Dr. Bright sums up the first seventeen cases with these brief remarks:—

“Similar instances might be multiplied to a very great extent; but they would still only serve to shew, that the most recent cases are often capable of cure by depletion, either by bleeding or purging, according to the acuteness of the attack, and by promoting gentle diaphoresis both by internal remedies and by strict confinement to bed;—and that many other cases admit of being so much relieved, that the patient is himself often confident of having obtained a perfect cure; being so free from all obvious symptoms of disease, that it requires the experience and knowledge of a physician to discover the latent malady, which however unfortunately, is soon brought to light by the necessary exposure of active life.”

The last *seven cases* are detailed with the view of exhibiting some of the complications or results of renal disease. We shall select the more striking only.

The *twenty-third case* offers some points of interest.

CASE 23.—*Albuminous Urine—Imperfect Vision, and other Cerebral Symptoms—Serous Inflammation—Phosphatic Deposits in one Kidney.*—Dr. B. was first consulted in the case of Mr. B., Nov. 16, 1837, a fine-looking man, approaching fifty years of age, who had served in the army many years, both in tropical climates and in the Low Countries, and had suffered twice from attacks of the yellow fever in the West Indies. In general, however, he had enjoyed very good health, till the last two years; during which time he had been accustomed to wake in the morning with a severe headache, with a most painful throbbing and beating in the eye-balls, which has been generally followed by vomiting, the moment he has risen from bed. These symptoms at first shewed themselves about once in a month; but have increased so much in frequency of late, that they often occur three times in the week; and occasionally sickness will come on suddenly in the day: and for the last few months there has been almost constantly a dimness in the right eye, so that if he attempts to read with that eye the letters are interrupted. He has no pain anywhere, except a little in the right kidney, which, however, is not tender on pressure; and he speaks of a little occasional pain in the nape of the neck, or near the insertion of the muscles, on the right side of the occiput.

He is now always disturbed in the night by very frequent calls to pass water, which is abundant, and very limpid: in the day-time he is seldom called upon for that purpose above twice, and the secretion is natural in appearance. Dr. B. found the pulse rather irregular, and detected a singular squeaking and croaking with the first sound of the heart. Supposing that there was a threatening of an apoplectic attack dependent, probably, on diseased arteries, Dr. B. ordered appropriate remedies, with temporary benefit; but, in December, Dr. B. was informed that the sight was so much impaired as to preclude reading.

"Jan. 27, 1838, I saw him again: he had lost flesh: his complexion was sallow: he had been suffering from dyspnoea for the last week, with pain, first at the lower part of the chest in the left side, and then in the right side, near the mamma; and, on examination, I found a *frottement*, from recent pleuritis, beneath one scapula.

Some of his symptoms had of late greatly improved, and his morning sickness was quite gone; but his loss of sight was so great, that he could neither read nor write. He still stated, that the frequent calls to pass urine during the night were very distressing, though there was nothing of the kind in the day; and the vessel was filled during the night with pale-coloured urine. He had observed this, in some degree, nearly three years, but it was much worse for some months. This led me to examine the urine; which I found highly albuminous, forming the usual precipitate, both with heat and nitric acid; and I now, for the first time, became acquainted with the real nature of the case. I had no doubt that the derangement of the kidneys had existed for two or three years; that they had in all probability already passed into a state of hopeless disorganization; that the cerebral affection had depended in a great degree upon the state of the kidneys; and that during the last week he had been suffering from an attack of pleuritis. In this case there had at no time been any signs of anasarca; and the skin, though rather dry, was capable of being brought into a state of perspiration by exercise.—The means made use of speedily put a stop to the recent inflammatory symptoms; but those which were referable to the kidney continued with little abatement; indeed, the calls were frequently not fewer than ten in the night; and a trial was made, by his medical adviser in the country, to control this symptom, by adopting an animal diet; which was to a certain degree successful: but the sickness of the stomach recurred; and in the beginning of April, when he had returned, after an absence, to his usual residence, he was seized with a sudden and alarming increase of symptoms,—dyspnoea coming on, and increasing rapidly, the slightest

movement producing the greatest distress, with utter inability to lie down; œdema of the lower extremities, hands and face, pulse seldom under 120."

Under the use of abdominal fomentations, affection of the mouth by mercury, and the *pyrola umbellata* he rallied marvellously, though only for a season. About the middle of 1838, he grew worse, the dyspnoea became excessive, the anasarca increased so as to require punctures, dysentery set in, and, the night before his death, he quite lost the use of his right side.

Dissection.—Body much emaciated; with very little appearance of œdema, except in the right arm.

Right cavity of the chest filled with whey-like fluid, not less than three pints, compressing the lung into one-fourth its natural size. The whole costal pleura, and the diaphragm and part of the lung, covered with a thin coating of lymph, alternating with spots and patches of vascularity and ecchymosis: some bridles of firm lymph from the lower lobe of the lung. The upper lobe, where not compressed, was œdematous.

The left cavity contained a few ounces only of straw-coloured serum. Pleura healthy, except some strong old adhesions.

Heart.—Three times the natural size: the left ventricle particularly enlarged by eccentric hypertrophy. The aortic valves quite healthy. The mitral valves, except one or two spots of thickening, natural. The right side of the heart rather hypertrophied. One ounce of fluid in the pericardium. Aorta enlarged, but not diseased.

Liver rather large and pale; held up to the diaphragm by very old long adhesions. The gall-bladder filled with small irregular angular calculi, in number 97; and one of a rather larger size near the opening of the duct: ducts pervious: stomach, spleen, and pancreas, healthy.

Kidneys.—The right, very small, and completely filled with a white paste, which, on examination, was found to consist of the earthy phosphates; the cortical portion forming a mere bag: the ureter of that side large and thick. The tunics adhered quite firmly to that kidney.—The left kidney rather larger than natural, soft and tough in texture, completely mottled throughout, and granulated on its surface, affording a very well-marked specimen of the disease. There were several small vesicles on the surface. The tunics did not adhere, but tore off easily, leaving a rough surface.—Bladder healthy.

Head.—Dura mater pale, and scarcely shewing any vessels. Arachnoid, and pia mater, pale: a very little serum in some of the sulci. The arachnoid separated easily. The brain was throughout exsanguine; but the only disease was a small softening about the size of a french-bean, apparently once an apoplectic clot, in the centre, rather posteriorly to the left hemisphere, hardly so low as the roof of the ventricle. No serum in the ventricles, and none in the base. The spinal cord was examined, but no disease discovered.

Dr. Bright remarks:—

"This case presents some points of interest. The severe headaches, and the interrupted vision, were marked symptoms when first discerned, though this was probably very long after the commencement of the disease. The flattering prospects, sometimes held out—the affection of the heart, probably a sequel to the renal disease—and the extensive serous inflammation which at length attacked him, and proved fatal—are all characteristic."

None can be more disposed to attach importance to renal disease than ourselves, yet we confess that we doubt the strict justice of referring to it as the *primum mobile* in cases like the preceding. The heart we conceive, has as much right or more to the distinction—and, whether we look at the history, the symptoms, or the amount of lesion, it would be difficult to postpone the claims of cardiac disease to those of renal. Not that we mean to deny the tendency created by the latter to serious secondary alterations; far from it. We only mean to limit

the application of views drawn from that tendency, and to enjoin caution in their adoption.

"There is another point of interest connected with the case I have last detailed. I refer to the collection of phosphatic deposit discovered filling the kidney; the remaining parts of which, as well as the kidney on the opposite side, had all the characters of advanced granulation; thus affording a striking example of the co-existence of that deranged action by which the phosphates are deposited, and that by which the albumen is secreted. We have thus an additional proof, if any were wanting, that the albuminous action admits of various complications; a fact which, indeed, has already appeared, from the details of many cases which have at various times been stated: for it is notorious, that the urine, which is generally acid in this disease, sometimes becomes alkaline, without losing its albuminous character; although the albumen may be in some degree modified: still, the lithic deposits are those which usually accompany it: and when calculi have been passed during the existence of the albuminous tendency, I have frequently found them to be composed of lithic acid. In the present case, however, we have the phosphatic deposit in large quantity, and in very tangible form.

It would be in vain to speculate on problems so imperfectly worked out; but, from the knowledge we possess of the co-existence of various forms of disease in the kidney, we might be inclined to suppose that no diseased impregnation of the urine is so completely dependent on what may be styled the organic agency of the kidney itself, as albumen. In diabetes, and in the different diatheses which produce calculous concretions, it is probable that the blood, as prepared by the various processes of the body, is much more in fault than the kidney; and it is truly extraordinary to what an extent, and to what duration, these diseases may proceed, without the kidney betraying any change; whereas it is certain that the ultimate tendency of the albuminous action is to disorganize the structure of the kidney: and it is still more extraordinary to find, that when the kidney is actually disorganized, it is still capable of undergoing that functional change which attends diabetes itself; or, at all events, that the existence of the albuminous arrangement does not prevent the existence of diabetes, and the secretion of saccharine matter. In confirmation of this, I will state a case which has lately come to my knowledge, of the well-marked combination of albuminous urine with diabetes mellitus, in which Dr. Bostock had an opportunity of verifying the fact, by chemical analysis."

This case we shall notice.

CASE 24.—Albuminous Urine in a case of Diabetes Mellitus.—William Schooling, aged 33, admitted Feb. 6, 1840, is a single man, a coachman; of intemperate habits; has never enjoyed good health. About a year and a half since he had a feverish attack, with excessive thirst: his urine at that time was natural, both as to quantity and appearance. Since that time his health has gradually declined, and he has become greatly emaciated.

On his admission, he complained of great weakness, pain in the back and loins; on the right side, increased by pressure: great thirst, and dryness of the mouth: gums red and spongy: skin dry: appetite craving. He sleeps well; but is forced to rise three or four times during the night, to pass water—quantity, in twenty-four hours, four quarts: sp. gr. 1034. The peculiar odour of hay is perceptible in the breath: pulse 82, sharp, but compressible: tongue slightly furred: bowels confined.

Animal food and creosote were prescribed. But he grew worse. In the night of the 23rd, his urine began to pass involuntarily, and on the 24th, the report states, that, he now lies in a comatose state: extremities cold: the hands firmly contracted: the mouth drawn to the right side: the pupils contract to the stimulus of light: pulse scarcely perceptible. He died at 6 p. m. of the 25th.

Dissection.—The vessels of the brain contained but little blood. There was a large quantity of fluid, both in the cavity of the arachnoid, and between it and the pia mater; but no unusual quantity in the ventricles.

The substance of the brain was throughout healthy.

There were two drachms of fluid in the pericardium, and traces of former pericarditis.

The heart was of natural dimensions, but pale, fat, and flabby. Its auriculo-ventricular valves slightly opaque.

There were old adhesions on the whole of the left lung, but no fluid in either pleural cavity.

The right lung was healthy. A portion of the apex of the left was hepatized in the first degree.

The abdomen contained four ounces of clear serous fluid, and there was slight adhesions of the omentum to its walls. The viscera generally were pale; the stomach distended; the intestines contracted: all were, in structure, healthy. The liver alone was rather fuller of blood than natural. The kidneys were of their usual size, flattened anteriorly: they were pale, and slightly mottled, but of natural consistence, and not granulated on their surface. The pelvis of each was rather more vascular than usual.

Dr. Bostock, on analysis, found both sugar *and* albumen in the urine. Dr. Bright winds up with a few hints on remedies.

“In the first steps, and the more acute forms of disease, bleeding may be considered the most important remedy: but this is, of itself, wholly inadequate to cure, unless we purge freely, and at the same time call upon the skin to do its duty. Of all the measures for effecting this latter purpose, the strictest confinement to bed is the most effectual; and without that, I do not believe that, in this climate, we have a chance of cure. That preliminary, however, being adopted, antimonials are probably the best diaphoretics: but the liquor ammoniæ acetatis is likewise very useful: and a simple saline draught of citrate of potash or soda, is, I believe, when diligently persisted in, of much avail: and the warm bath, in its various forms, may in many cases be brought to act most beneficially.

Amongst the purgatives, I shall only mention, that elaterium and jalap, with the bitartrate of potash, appear to me the most effectual. When the disease has made further progress, and has become chronic, perhaps organic, I should still recommend the greatest attention to the full effects of purgation, and to the state of the skin, and to protection from atmospheric changes; and I am more and more impressed with the probability, that if a complete change of climate were tried, great benefit might result. A voyage to the West Indies, and a residence in one of the more healthy islands, often produce a great change in the constitution, acting chiefly upon the pores of the skin. We have, at least, the negative experience, that confirmed cases rarely recover in this country, whatever treatment be adopted; and the skin being always more or less inactive, suggests most forcibly a change of climate as likely to promote its function. It is the doubt, and uncertainty with which this disease is often viewed, that interferes with our recommending this bold measure, or, if recommended, interferes with its adoption: and I trust that the perusal of a few such cases as I have brought forward on this occasion, will assist in producing a conviction of the actual existence of this disease, and of such an approach to incurability by any means we at present possess, that a physician should feel no more compunction in recommending the expatriation of his patient with albuminous urine, than he would in a case of incipient or threatened phthisis.

There are certain remedies, whose actions in this disease are less obvious than those to which I have referred; but many of them probably act by affording a degree of stimulant or astringent action to the kidney: of these I may mention the mineral acids as applicable in the declining stages of more acute attacks;

the uva ursi, in its different preparations, in the chronic disease, the pyrola umbellata, and the diosma crenata where great irritability of the urinary organs exists—a remedy which I have been led to adopt. in many cases, from the very favourable reports of Sir Benjamin Brodie: nor have I been disappointed of some good effect, though I should perhaps employ with greater confidence a long-continued course of soda, conium, and uva ursi. One thing, however, must be kept in mind, that whatever remedy is given to overcome a disease so chronic and confirmed, must be administered with exemplary patience and perseverance."

As regards those cases of renal disease and albuminous urine which are attended with irritability of the bladder, we must say that we have seen much more benefit from the diosma than from the uva ursi. Nor have alkalies or the alkaline subcarbonates corresponded with our expectations, or the recommendations of others; on the contrary, they have too frequently aggravated the frequency of micturition, and sometimes very materially. Sedatives have a certain influence upon the bladder, and, in some instances, the mineral acids conjoined with them are attended with a good effect. But, after all, candid men must admit that when once there is good reason to suspect the existence of organic lesion, a perfect cure is rare indeed.

The profession must be under deep obligations to Dr. Bright, for having drawn its attention to this serious malady. Our knowledge of its features has done much to give certainty to our diagnosis, and precision and rationality, if not success, to our treatment, in many cases formerly managed most empirically.

We shall introduce here as a pendent to Dr. Bright's paper, another by Dr. Barlow, headed thus:—

CASES OF ALBUMINOUS URINE, ILLUSTRATIVE OF THE EFFICACY OF TARTAR EMETIC, IN COMBINATION WITH OTHER ANTIPHLOGISTIC REMEDIES, IN THE ACUTE FORMS OF THAT DISEASE. By GEORGE H. BARLOW, M.A. & L.M.

Dr. Barlow is anxious to contribute towards the remedying of this disease. His object was two-fold—to discover if the dropsy succeeding scarlatina depends on renal disease—and to treat it with the most success.

He relates two cases, with the view of proving the identity of the anasarca with albuminous urine which follows scarlatina, with the "*morbis Brightii*" from other causes. These cases, as they go to prove an important point in pathology, we shall quote.

CASE.—Scarlatina—Anasarca—Death—Kidneys diseased.—Thomas Waters, aged 16, (Jan. 16, 1836), had a febrile attack about nine weeks ago, which was attended with sore-throat and great heat and redness of the skin, followed by desquamation, from which he in a great measure recovered; but a month ago he began to swell, first in his hands and face, and then over his whole body: for this he was attended by Mr. Howitt, of Walworth, under whose care he greatly improved, and about ten days ago he was nearly free from swelling; but about five days ago, it again returned, and has continued to increase up to the present time. He is now generally anasarcaous; and there is a considerable quantity of fluid in the peritoneum. He has much pain in the loins, extending across the abdomen towards the umbilicus; and there is some tenderness, upon pressure, about the situation of the kidneys, especially of the right. Urine of a dingy-red colour, much loaded with albumen.

He was ordered small doses of tartar emetic, in combination with hyoscyamus; which he continued to use, with slight benefit, till the 3rd of February; when he was removed to Guy's Hospital, where he continued only five days: after which he was taken home at his own request, and died within two days.

The kidneys were very large; and the whole of the cortical structure of both was interspersed with a large proportion of pale yellow granular matter.

CASE.—*Scarlatina—Anasarca—Partial Recovery—Relapse—Death—Kidneys large and white.*—Elizabeth Dawkins, aged 11, (March 23, 1839). Has generally enjoyed good health. A month ago, she suffered from severe and well-marked scarlatina; from which she was slowly convalescent, when it was observed a few days ago, that her face was swollen. This swelling has continually increased to the present time; and she is now universally oedematous. She complains of headache, and pain across the chest, aggravated by inspiration. Tongue furred: bowels confined: pulse sharp: urine scanty, of a deep dingy-red, and very albuminous.

She was treated with purgatives; tartar emetic, with acetate of ammonia; and small doses of ipecacuanha. On the 26th, she was apparently so much better that she exposed herself, and on the 2nd April Dr. Barlow found her insensible, with well-marked symptoms of severe cerebral disease, and extensive anasarca. From this state she was recovered with some difficulty; and appeared to be gaining ground rapidly for a few days, when symptoms of effusion in the chest suddenly came on, and in a few days ended her life.

Dissection.—A large quantity of purulent fluid was found in the right pleural sac. About half-a-pint of serum was contained in the pericardium, with shreds or flocculi of fibrin, and the left ventricle of the heart was hypertrophied. The kidneys were large and lobulated; and a greyish-white colour, with but little trace of the natural structure, pervaded all the cortical substance. The tubuli were dark, being of a deep chocolate colour.

These cases tend, and in a strong degree, to direct attention to the kidneys in cases of dropsy succeeding scarlatina. There have been hardly enough, at present to establish a conclusion of such consequence.

As we before observed, it is Dr. Barlow's object to shew the efficacy of antiphlogistic and antimonial treatment in the dropsy succeeding scarlatina. The following case is related with that view.

CASE.—*Anasarca and Ascites, consequent upon Scarlatina—Urine highly albuminous—Cerebral Affection,—Complete Recovery.*—William Cowlen, aged three and a half years (Sept. 29, 1835), a fine boy, who has generally been healthy, was five weeks ago the subject of scarlatina, from which he in a great measure recovered, but did not regain his former liveliness and activity. About a week ago he began to swell, first in his face and hands, and afterwards in his whole body; which swelling has continued to increase. About the same time he complained of headache, and became more and more drowsy; and for the last five days his mother has observed his urine to be of a deep dingy red colour. At present he is much swelled over the whole surface of his body; his skin is harsh and dry, but not hot; his eyes nearly closed; tongue covered with a yellowish fur; pupils contracted: the child evinces a great objection to the slightest motion or exertion, and seems to take no notice of any one: pulse sharp, small, and frequent: bowels not open during the last thirty-six hours: urine scanty, of a dingy red colour, and coagulating upon boiling to such a consistence, that it remains in the spoon when inverted.

Pulv. Jalap. C. gr. x. st. sumend.

Ant. Tart. gr. j. Sacchar. purificat. 3j. M. fiant pulv. xvi. e quibus sumat j. quartâ quâque horâ.—Hirud. ij. pedibus.

Next day he was better, but, on the following, he was worse. He was nearly comatose—the face exceedingly swollen—the pulse small, sharp and very rapid. The bowels had not been opened for twenty-four hours.

Hirud. iij. temporibus.—Pulv. Jalap. C. gr. x. statim.

Rep. Pulv. tertiâ quâque horâ.

He was much better next day, and continued to improve till the 5th, when the dose of tartar emetic was increased by one-half—two leeches applied to the loins—and a warm bath ordered every night. The perspiration augmented materially under the influence of the latter—the bowels were kept open by the compound jalap powder or by castor-oil—and the dropsical effusion rapidly subsided. The tartarized antimony was gradually diminished in frequency, and the bath used at longer and longer intervals. Under this treatment, his urine gradually lost the dingy-red colour, and regained its natural appearance; its specific gravity also gradually increased, till it reached about 1023; his appetite became very hearty; but animal food was, throughout his convalescence, very sparingly allowed. By the end of November he was, to all appearance, in perfect health; full of flesh, with rosy cheeks, and a clear complexion. His urine, upon the most careful examination, did not afford the slightest evidence of the presence of albumen. Dr. Barlow ascertained that the child continued well in October last, four years after the illness just described.

"I have adduced the above as an instance of a very severe case of this disease following scarlatina, successfully treated by occasional depletion, gentle purgatives, and tartar emetic. I ought to mention, that in a very severe case of the same kind, which occurred to me about a year ago, I used the tartar emetic in larger doses, in proportion to the age of the child; but did not, from the state of its general powers, think it advisable to have recourse to bleeding in any shape; and that the child went on very well, excepting that after the anasarca had disappeared the remedy was continued (the child having been removed into the country) and obstinate diarrhœa ensued, which was, however, at last allayed; and the child ultimately recovered, and was, to my own knowledge, a short time ago, in perfect health."

If it were proved that the dropsy succeeding scarlatina were identical with that resulting from granular degeneration of the kidneys, and if the antimonial treatment just referred to were found to be efficacious for the former, it would, of course, be only reasonable to presume that it would answer well for the latter. But we would observe that men's experience has already established a difference of fact between the scarlatinal and other dropsies, which pathological inquiries can hardly shake—the dropsy after scarlatina has proved *the more curable*. It matters little, at this moment, on what the superior curability may hinge—whether on the patient's youth, or on an essential pathological difference—the fact remains the same, and must preclude any very confident anticipations respecting the effects of remedies on common dropsy.

Dr. Barlow, however, proceeds to apply what he has made out to renal dropsy, and proceeds to detail seven cases, treated on the principles already indicated. The two first we shall pass over, as occurring in children, some doubts may be entertained about them. We shall take:—

CASE.—*Anasarca and Ascites—Albuminous Urine—Complete Recovery.*—"Patk. Queenland, aged 49, Aug. 22, 1839, a stout powerful man, of temperate habits, employed as a porter in a hop-warehouse. A year ago he was under my care for acute rheumatism; since which he had good health, till ten days ago, when he was attacked with headache, and pains in his loins, extending across the epigastrium; ten days afterwards he observed that his feet and scrotum were much swollen, and that his face was puffy in the morning. At present, there is general anasarca, especially of the scrotum, with some ascites.

Pot. Acet. ℥j. Sp. Æth. Nit. ℥xx. Vini Ipecac. ℥x. ex Mist. Mucilag. t. d.

Pil. Scillæ C. Extr. Hyosc. āā gr. v. b. d.

Aug. 24. Little alteration, excepting that he complains of increased thirst. A specimen of urine which I saw to-day gave a copious precipitate with nitric acid: skin dry: pulse hard and sharp: bowels rather torpid.

C. C. lumbis ad x.

Ant. Pot. Tart. gr. ʒ. Mag. Sulph. ʒss. Liq. Ammon. Acet. ʒss. ex Mist. Camphor. t. d.

Pulv. Ipecac. Comp. gr. v. o. n.

27. Skin still dry : pulse softer : tongue cleaner : pain in the loins much relieved.

Aug. dos. Ant. Pot. Tart. ad gr. ʒ.—Pergat.

29. Œdema much reduced : pulse soft : urine less albuminous : slight perspiration at times.

Pulv. Jal. C. ʒss. ault. auroris.

Cont. Mist. sine M.S. et Pulv. ut antea.

Sept. 7. The œdema has entirely disappeared, excepting a little about the ankles : the powders have acted very slightly : no albumen in the urine.

Pulv. Elaterii, gr. ʒ. Pulv. Jalap. C. ʒij. alt. auroris.—Pergat.

12. The last powders have produced rather watery dejections : pulse soft : tongue clean : perspires freely : a little albumen in the urine.

Pulv. Elaterii gr. ʒ. Pulv. Jalap. C. ʒij. bis in hebdomadâ.

Adde M.S. ʒss. sing. dos. Mist. Cont. Pil.

17. No albumen : no anasarca.

21. Continues well : no albumen.

I have ascertained that this man is now (seven months since his illness) in good health."

The two succeeding cases will be sufficiently explained by their headings, the one being :—*anasarca of two weeks' standing—albuminous urine—recovery apparently complete*—the other,—*scarlatina at the age of eight—anasarca, with albuminous urine, at the age of twenty—recovery complete*. The following remarks of Dr. Barlow's explain his views :—

"The three last cases, I think, afford a proof that the disease under consideration does sometimes make its attack, in the adult, in the form of an acute affection, the time of the invasion of which is well marked; and they further shew, that when thus occurring, and when met sufficiently early with decided treatment, it is susceptible of cure. Of this treatment I believe that the use of tartar emetic forms an essential part :—and I take this opportunity of expressing my opinion of its utility, partly with a view of explaining a statement made by Dr. Bright in the Second Volume of this work, that I had believed it to exert almost a specific influence in this disease. This is, perhaps, more than I ever intended deliberately to affirm, as I much doubt the existence of a specific in any disease whatever. But I believe that, in this instance, the tartar emetic is more ;—it is a remedy suggested by the nature of the affection, and calculated to fulfil the most obvious and important indications, namely, equalizing the circulation, subduing the inflammatory action, and restoring the functions of the skin. At the same time, I am far from recommending its use to the exclusion of other means calculated to aid in fulfilling the same indications : and among the most valuable of these adjuncts, I would reckon moderate local depletion, hydragogue cathartics, the warm bath, or, what is perhaps of equal value when this cannot be employed, the investing the loins in a large linseed-meal poultice.

I am aware that a great difference of opinion exists with regard to the diaphoretic plan of treatment in this disease, of which plan the tartar emetic may be regarded as a part ; though I am far from regarding it exclusively in this light ;—Dr. Osborne having warmly advocated its use ; whilst Dr. Christison says, that it disappointed the expectations which he formed from a perusal of the elegant little treatise of the former ; and extols the advantages of diuretics, and seems inclined to regard the apprehensions entertained by many, respecting the ill effects which may be expected from their use, as utterly groundless. But, for my own part, I do not think that sufficient stress has been laid by either of

these authors upon the different treatment which must be necessarily required by difference in the period and form (whether acute or chronic) of the disease: for I believe that opposite remedies may be useful in its different stages; just as we know that in bronchitis, a disease which bears no very remote analogy to that under consideration, a decidedly antiphlogistic plan of treatment is imperatively called for in the acute and early stage; but that when the inflammatory action has been subdued, or the disease has passed into the chronic form, stimulating expectorants are frequently of essential service, although their inappropriate or too hasty exhibition is attended with the worst results.

Again, it should not be forgotten that copious diaphoresis may occur, either spontaneously or from the effect of remedies, without any concomitant amendment taking place; which happened in the case of Dawkins (case 3 of present communication), and in case 7 of Dr. Bright's communication upon this subject, in the First Volume of this work.

But it is not merely as a diaphoretic that I would recommend the tartar emetic in the acute form of this disease: it is on account of its power of lowering the heart's action, as well as 'its local effects upon the capillaries, when it reaches them through the circulation;' whereby it diminishes the inflammation in the superficial capillaries of the lining membrane of tubuli uriniferi: for that such a state of the tubuli exists in the early stage of the disease is, I think, made apparent by the condition of the kidneys, in all the recent cases which have been examined.

It may be objected, that there is, not unfrequently, so great an irritability of stomach as to preclude the exhibition of the tartar emetic. This state of stomach has, within my observation, been confined mostly to the more-advanced stages of the disease; for I have only met with it in one recent case, which was complicated with extensive peritonitis, involving the peritoneal coat of the stomach.

With regard to the dose of the remedy, I would observe, that where the pulse is hard and full it may be given in such doses as in the first instance to produce nausea; but where there is a low state of the system, the antimony may be given in smaller doses, frequently repeated, so as to reach the capillaries without producing depression. I have never found it necessary to give more than half-a-grain at a dose to an adult; neither have I attempted to push it to the greatest extent possible;—the object not being to give heroic doses of the remedy, but, if possible, to cure the patient."

Setting aside a case in which the albuminous condition of the urine completely disappeared, after two attacks of renal dropsy, we come to the concluding case of Dr. Barlow's, intended to shew, that the plan of treatment recommended above will not be found useless in acute attacks supervening upon the chronic form of the disease, provided a change of measures be adopted as soon as the acute symptoms have subsided; when, as has been already suggested, tonics and moderately stimulating diuretics will be found serviceable.

CASE.—Albuminous Urine, probably of Two Years' standing—Recent Aggravation—Partial Recovery.—George Sheppard, aged 49, admitted under Dr. Barlow, at the Surrey Dispensary, July 18th, 1839. He said that he had been for two years gradually losing his strength; and during that time he frequently observed his face to be swollen, especially about the eyelids, when he arose in the morning; and that his legs and ankles often swelled: that a year before he had suffered from general dropsy, attended with pain in the loins and across the epigastrium; for which he was admitted as an out-patient at Guy's Hospital, and obtained considerable relief, though the weakness never ceased entirely: and that about three weeks ago, he was again, after being wet through, attacked in a similar manner.

"At the time I first saw him, his legs, hands, and face, were cedematous, as

were the integuments of the loins and abdomen; though I could not ascertain the existence of any fluid in the peritoneal cavity. He complained of aching in the loins, and pain across the epigastrium. His appearance was leucophlegmatic, pulse sharp and frequent, tongue furred, bowels regular. I had not then an opportunity of examining his urine; but having little doubt of the nature of the disease, I ordered him to take one-eighth of a grain of potassio-tartrate of antimony in solution with acetate of ammonia, in camphor mixture, three times daily: five grains of Dover's powders every night: and half-a-drachm of compound jalap powder twice a week: to live chiefly on bread and milk.

On the 20th, I had an opportunity of examining his urine, which was much loaded with albumen. He was then much relieved, and said he had perspired a little on the preceding night."

On the 5th of August, the anasarca had nearly disappeared. He was ordered,
Sp. æth. nit. ℥xx. Tinct. ferri sesquichlorid. ℥xv. ex infus. gentian.
comp. t. d.

Pulv. ipecac. c. gr. v. o. n.

Pulv. jalap. c. ʒss. bis in hebdomadâ.

On the 16th of November, he left the dispensary, declaring that he was well, though there was still some albumen in the urine.

These communications of Dr. Bright and Dr. Barlow are both interesting, and calculated to direct still more attention, on the part of practitioners, to complaints so serious and so frequent as these renal affections are.

ON THE PROPORTION OF UREA IN CERTAIN DISEASED FLUIDS. By G. O. REES, M.D., F.G.S. Physician to the Northern Dispensary.

Dr. Rees' object is to determine the *proportion* of urea contained in the blood in certain morbid states—the *existence* of it being now established. The following is his plan.

"The delicacy of the plan I now adopt is very great; so much so, that urea can be obtained perfectly pure from an animal fluid, which contains it in the proportion only of 0.15 per mille. The analysis is performed as follows:—The serum, or effused fluid, is evaporated to dryness, at a heat sustained somewhat below 212° Fahrenheit; the dry mass is broken up; boiling water thrown upon it, and allowed to digest several hours. This liquor being carefully poured off, a second portion of water is added, and allowed to digest; after which, the whole is thrown on a filter, and the solid matters washed with distilled water till the percolating fluid ceases to effect a solution of nitrate of silver. The digested and filtered liquors are next evaporated to dryness, by a gentle heat; and the extract, so obtained, digested in a stopper-bottle, with common ether of the shops, of sp. grav. 0.754. This menstruum extracts the urea only; and by digesting successive portions of it until the last added yields no deposit of that principle on evaporation, we obtain the whole of the urea present, and thus directly estimate its weight. As obtained by this process, urea is quite pure and colourless. It once happened to me to observe some slight contamination of the urea, obtained as above, by fatty matter which had escaped separation with the albumen: this, however, was easily got rid of, by dissolving the urea in distilled water, and throwing the solution on a filter previously moistened, when the fatty matter remained behind, and allowed the urea to pass through, perfectly pure."

The following quantities of urea were obtained from different specimens of blood.

"The first fluid which I shall mention, as examined by this process, was obtained from John Gillmore, Dec. 18, 1839, a case of albuminuria. It was an effusion on the brain, and 210.4 gra. were obtained for examination. From

this quantity 0.05 gr. of urea was obtained, equal to about 0.415 per mille. This fluid yielded but slight traces of albumen.

The second case, from which I obtained the serum of the blood, and likewise a portion of fluid which was procured from the cellular tissue by making punctures in the scrotum, was that of John Wiseman, a boy in Job's Ward, under the care of Dr. Bright. The serum of this patient was of sp. gr. 1015, and contained only 23.49 gr. of albumen in 500 grs.; whereas the same quantity of healthy serum affords about 39.75 grs. It contained 0.2096 per mille of urea. The fluid obtained from the scrotum was of sp. gr. 1007.9: the analysis of 500 parts gave,

Water	492.400
Albumen	0.800
Extractives and salts	6.725
Urea	0.075
	<hr/>
	500.000

the proportion of urea being equal to 0.150 per mille.

The third case, from which I obtained the serum of the blood at two different times, and also the fluid effused into the pericardium, was that of Susan Smalling, a patient of Dr. Bright.

The first specimen of blood was received on March 4th. The specific gravity of its serum was 1025, being somewhat lower than natural: the analysis of 500 grs. yielded,

Water	452.10
Albumen	32.50
Extractives and salts	15.15
Urea	0.25
	<hr/>
	500.00

We here observe a deficiency of albumen, an increase of extractives and salts, and the presence of an ingredient foreign to the serum. The second specimen of blood which I received from this patient was obtained by cupping; and not from the arm, as was the case with all the previously-mentioned specimens. It was sent to me on the 30th of April. The specific gravity of its serum was then 1029, or natural: the analysis of 500 parts was as follows:—

Water	448.3
Albumen	40.8
Extractives and salts	10.65
Urea	0.25
	<hr/>
	500.00

The effusion into the pericardium of this patient was of sp. grav. 1028. It yielded urea, but only a trace in 500 grs. of the effusion.

It will be observed, from the analysis quoted above, that the largest proportion of urea which I have detected in the blood is 0.5 per mille, and the least 0.2096. The effusion on the brain gave 0.415; the fluid effused into the cellular tissue of the scrotum, 0.150 per mille; and the pericardial fluid merely a trace in 500 grains.

The condition of the blood in the patient Susan Smalling is worthy of consideration, inasmuch as the serum of the blood underwent a great change between the dates of March 4th and April 30th: it being sp. grav. 1025 on the former, and 1029 sp. grav. on the latter date: the proportion of urea, however, remaining the same. The serum of the 30th April, if we except the existence of urea,

may be considered as normal; the albumen being present quite to the natural extent; indeed, if any thing, somewhat beyond the amount generally found in the serum of healthy blood.

The case from which the scrotal fluid was obtained, affords an instance of great decrease in the specific gravity of the serum of the blood. The lowest specific gravity mentioned by Dr. Christison, in his lately-published valuable work, is 1019; this specimen was, however, only 1015 sp. gr."

Dr. Rees has been unable to obtain urea from the serum of healthy blood.

OBSERVATIONS ON THE EXISTENCE OF CERTAIN ELEMENTS OF THE MILK IN THE URINE DURING UTERO-GESTATION; AND ON THE APPLICATION OF THIS FACT TO THE DIAGNOSIS OF PREGNANCY. By GOLDING BIRD, M.D. F.L.S. &c.

This indefatigable and talented young physician, had his attention drawn by the Medical Journals to a peculiar mucilaginous principle, said to exist in the urine of pregnant women. This new constituent, he says, of the renal secretion, which has been dignified with the name of *Kiestein*, is stated to exist in the urine of the human female during utero-gestation, and to become visible when the secretion is allowed to repose in a cylindrical vessel, in the form of a cotton-like cloud, which in a lapse of time, varying from the second to the sixth day of exposure, becomes resolved into a number of minute opaque bodies, which rise to the surface, forming a fat-like scum, which remains permanent for three or four days: the urine then becomes turbid, and minute flocculi detach themselves from the crust, and sink to the bottom of the vessel: this action continues until the whole pellicle disappears. This crust of *Kiestein* is stated to be distinguishable from analogous pellicles which occasionally form on the surface of urine, from its never becoming mouldy, or remaining on the surface beyond three or four days from the time of its complete formation.

Dr. Bird accordingly examined the urine first passed in the morning by about thirty pregnant women, and, in all, save three, copious fat-like pellicles were observed on it, after two or three day's exposure. The next thing Dr. Bird did, was to examine the nature of this *Kiestein*.

"None of the specimens of urine voided by pregnant women, that I have examined, were coagulable by heat, nitric acid, or, with but two or three exceptions, by acetic acid, and therefore could not contain any considerable portion of albuminous or caseous matter: the addition of ammonia almost invariably produced a dense deposit of earthy phosphates; which, under the microscope, appeared to consist of myriads of minute acicular crystals; and, with the exception of this proof of the existence of an excess of earthy phosphates in the secretion, no appreciable portion of any anormal ingredients could be detected.

Some of the fat-like pellicle was removed from the surface of some urine on which it had formed, by plunging a plate of glass perpendicularly into the fluid, and withdrawing it adroitly, in a nearly horizontal position; an equable layer of the substance was thus procured; and, when carefully covered with another plate of glass, it could be very conveniently submitted to examination.

The pellicle thus procured, appeared glistening with a lustre like that of spermaceti: when placed under a microscope, and examined with an object-glass of a quarter-inch focal length, myriads of superb triangular prisms, strongly refracting light, and resolving it into colours, were seen imbedded in a mass of irregular granular matter, mixed with which, might here and there be seen patches of tolerably regular globular bodies. The transparent trian-

gular prisms were soon recognised as the well-known crystals of triple phosphate of magnesia; they were so beautifully distinct, and their angles so sharply defined, that the whole became a most interesting microscopic object: some of the crystals were placed on end, and thus appeared like triangular plates."

When the urine is kept so long that the pellicle begins to break up, it, as before stated, falls, in the form of a deposit, to the bottom of the vessel; and if the supernatant fluid be decanted, and the deposit collected on a slip of glass, it is found to present the same appearance as the pellicle; excepting that the crystals are much more numerous, and all the animal matter present is entirely composed of amorphous granules; all trace of any thing like a regular structure being lost.

A slip of glass, on which a portion of the peculiar pellicle had been collected, was placed under the microscope, and covered with a few drops of acetic acid; instantly the whole became opaque, the crystals became rapidly dissolved, and a white pultaceous mass resulted. On washing the whole with a few drops of water, and carefully drying the residue, a white opaque layer was left upon the glass, in which no trace of crystalline matter was perceptible, upon very minute microscopic investigation. Even upon illuminating the object with a beam of polarized light, and analysing the transmitted ray by placing over the eye-glass of the microscope a very fine pale-brown tourmaline, not a trace of colour could be detected; a very faint depolarizing action of the animal matter left on the glass being alone perceptible.

Another portion of the pellicle, also collected on a glass plate, was placed under the microscope, and a few drops of strong liquid ammonia were added: the crystals underwent no change, but became much more distinct from the opaque matter, in which they were imbedded, undergoing solution. In the course of half-an-hour, the glass was carefully washed with a little water, and again examined; when every trace of animal matter was found to have disappeared, and the crystals of the triple phosphate were alone left.

The beautiful crystals present in these pellicles become extremely manifest when a portion of the fat-like scum is collected on a slip of glass, and dried: a drop of Canada-balsam is then placed upon the dried residue; and the whole being gently warmed, a slip of glass, or mica, is pressed flat upon the balsam. When cold, the specimen may be preserved for any length of time. Under the microscope, the crystals are visible with remarkable distinctness; the animal matter mixed with them becoming nearly invisible, from its being immersed in a medium of nearly the same refractive power.

"From the investigations I have made, the greasy aspect of the pellicle of the so-called *Kieslein* arises not from the presence of fat, but from the numerous crystals of triple phosphate, which, from their brilliancy, produce this glistening appearance: with regard to the nature of the animal matter mixed with these crystals, it is difficult, in the present state of physiological chemistry, to give a positive opinion: it is not mere albumen or casein, although much closer allied to the latter than to any other product of organization I am acquainted with, especially when we connect with its chemical character the powerful cheese-like odour so frequently evolved, during its development in the urine, in the form of a pellicle. To this view may be objected the circumstance, that the urine yielding it, does not coagulate on the addition of acetic acid: this, however, is by no means an important objection, as milk, when considerably diluted with a saline solution, or even water, is not perceptibly troubled by acids; so that whilst it may be fairly considered as constituted of an imperfect caseous matter, mixed with crystals of the ammoniacal phosphate of magnesia, it is equally obvious, that nothing can be more absurd than to dignify this mixture with a peculiar name, or to consider it as constituting a new organic principle.

There are few products formed during repose in urine which can be readily confounded with this caseous pellicle; if it be borne in mind, that the secre-

tion remains faintly acid up to the moment of breaking up of the crust; which phenomenon I am inclined to regard as arising from the development of ammonia in the urine, as at this time it acquires distinct alkaline properties. The crust of earthy phosphate, which forms on the surface of all urine by long repose, cannot be mistaken for the pellicle under consideration; as that which destroys the latter, viz. putrefaction, causes the production of the former."

After noticing the contradictory opinions of physiologists as to the presence of certain ingredients of the milk in the urine, Dr. Bird remarks,—

"On reviewing the foregoing remarks, and finding, as I believe we do, sufficient evidence of the presence of certain ingredients of the milk, as caseous matter, and abundance of earthy phosphates, in the urine of pregnant women, I would suggest, as a probable explanation opposed to no physiological views that I am acquainted with, that during utero-gestation certain ingredients of the milk are eliminated from the blood by the mammary glands, and, as is very well known, often accumulated in the breasts, in sufficient abundance, to escape from the nipple on pressing it between the fingers. This imperfectly formed secretion not having a ready exit by the mammæ, is taken up into the circulating mass, is separated by the kidneys, and, eventually, escapes from the body in the urine. This view is analogous to the hypothesis of Prof. Burdach, before referred to; and although not quite consonant with the views of M. Rayer, yet is quite in accordance with what we find occurring, under certain circumstances, in the bile, in the cases of obstruction of the biliary ducts; and more rarely in the urine, when, from the presence of calculi or other causes, the ureters are completely obstructed."

Dr. Bird has not met with these pellicles in the renal secretion of nurses, whilst suckling. He mentions a case, which, he thinks appears to justify the idea, that, whilst suckling, the milk being got rid of almost as quickly as it is secreted, none of its elements find their way into the urine; but as soon as the milk ceases to be removed in this way, indications of it are to be met with in the urine, provided pregnancy exists.

He has several times examined the urine of women shortly after their confinement, and hitherto has not succeeded in detecting any indications of the presence of milk in that secretion.

"For want of a sufficient number of observations, I am unable to state how long after conception the urine assumes the properties characteristic of pregnancy. In one case, that of a woman who considered herself to be at the end of the second month of her pregnancy, the urine yielded a well-marked pellicle: but I do not place much confidence in this observation, as the woman might very likely err in calculating how far she was advanced in utero-gestation. As a test for the existence of pregnancy, the formation of the caseous pellicle, especially if accompanied by a cheese-like odour, will, I have no doubt, be an extremely valuable *corroborative* indication: but I would not found on it alone any positive opinion, because, as a sufficient number of observations have not yet been made on this subject, we have no right to assume, however probable it may be, that a caseous pellicle can appear *only* when pregnancy exists. It should be borne in mind, that in many specimens of diabetic urine, as has long ago been shewn by Dr. Aldridge of Dublin, and Dr. Brett of Liverpool, a true deposit of casein, mixed even with traces of butter, occasionally exists. Connected with other symptoms, I should regard the formation of the caseous pellicle in the urine as a valuable *corroborative* indication; but if existing alone, and unsupported by any other indications of pregnancy, we have no right, in the present state of our knowledge, to regard it as conclusive."

Spirit of the British and American Periodicals, &c.

ON THE USE OF NITRATE OF SILVER IN SOME AFFECTIONS OF THE MU-
COUS MEMBRANES. By ALFRED HUDSON, M.B. Physician to the Nassau
Fever Hospital.*

Dr. Hudson observes that, since the Senior Editor of this Journal directed the attention of the profession to the effects of small doses of the nitrate of silver, in cases of morbid sensibility of the stomach, the remedy must have been a good deal employed. He thus refers to some who have contributed observations on the subject.

"Dr. Osborne assigns it an useful adjuvant action, as an astringent in gastralgia, with sour vomiting. Mr. Langston Parker classes it with morphia and bismuth as a *sedative* in ulceration of the stomach. Dr. Bigger gives us the testimony of Dr. Steinitz, to its efficacy in nervous debility of the stomach; and of Dr. Schneider, in dyspeptic palpitation: and a case of its successful exhibition, in this latter affection, is given by Dr. Copland, in his article "Indigestion;" and recently M. Boudin has published his observations on its effects in gastro-enteritis, when given by the mouth and by enema."

1. Dr. Hudson has used the nitrate a good deal in the stomach complaints so prevalent amongst the Irish peasantry. He relates three cases of severe gastralgia in which the nitrate proved eminently serviceable. We may quote the second as a sample.

Case.—Michael Monaghan, aged 15, admitted February 3, 1839.—Has suffered for six months acute pain, with tenderness on pressure in the epigastric region; great distention of stomach after eating; thirst, costiveness, and vomiting of sour fluid. Pain usually commences about an hour after dinner, and continues through most of the night, preventing sleep; it is generally accompanied by vomiting of sour fluid, without food. He has been under medical treatment, but, as he says, without benefit.

Nitrat. Argenti gr. ʒ.
Opii. gr. ʒ.
Pulv. Rhei;
Ext. Humuli, āā. gr. i.
Ft. Pil. ter die sumenda.
Bread and milk for diet.

His farther history is, that during his stay in hospital he had but one return of the vomiting. The pain and tenderness subsided in the course of a week. The pills were discontinued on the tenth day, and on the twenty-eighth he was discharged free from complaint.

2. Dr. Hudson has resorted to it in dyspepsia, combined with sympathetic affections of other organs. He has several times given it where the painful feelings were referred to the *head*, as giddiness, especially on motion; confusion of vision; ringing noise in the ears; with, at the same time, a pale countenance and feeble circulation.

3. He has also used it in cases of nervous debility of the stomach, the primary complaint having been uterine leucorrhœa. And indeed he has seen

* Dublin Journal, May, 1840.

it of great advantage to the leucorrhœa itself. He details three cases; we select one.

Case.—Mrs. R———, aged 36, the mother of four children, was confined more than a month ago, and since she commenced moving about has been tormented by a viscid, transparent, colourless discharge, which goes off at night and returns during the day, in great quantity. She has dull pain in the loins, and gnawing at the pit of the stomach. She has had several abortions, and suffered much from the same complaint after each of them.

April 5th. She commenced taking the nitrate of silver in doses of a third of a grain, with powdered ginger and extract of hop, three times a day.

On the 15th of April she had taken ten grains of the medicine, and was quite well. She said she never got well so quickly in her life: she soon after became again pregnant.

4. Dr. Hudson has seen it very useful, as he has seen it fail, in dysentery and diarrhœa. It appeared to answer in a case of hæmaturia. In two cases of catarrh of the bladder, and in one of hæmorrhage from the urethra it seems to have been inefficient.

He gives the following summary of its effects.

1st. A topical action upon the inflamed, congested, and ulcerated portions of the alimentary canal, similar to that which it exercises upon similar affections on the surface of the body.

2nd. A power of acting as a stimulant on the capillary circulation of different parts of the body, as of the brain and uterus.

3rd. A tonic power of the very first order.

The profession will do well to keep its eyes open to the utility of this medicine in many cases. We have for some time been in the habit of employing it, and often with advantage.

A CASE OF HYDROPTHALMIA SUCCESSFULLY TREATED BY MERCURY. By JAMES O'BRIEN, M.D. one of the Surgeons of the Richmond Surgical Hospital, Dublin.

Case.—Mary Anne Redmond, aged 40, much exposed to weather, was admitted Sept. 24, 1839, with considerable enlargement and protrusion of the globe of the right eye, and total loss of vision of that organ.

Examined in profile, it is completely uncovered by the upper eyelid, and projects considerably more than the sound one; it is equally distended in its entire circumference, and its sclerotic portion has a bluish cast, and appears as if thinned; the relative distance between the anterior and posterior chambers is preserved. The cornea is not altered in figure, and in size bears a just proportion to that of the rest of the ball. The iris is of its natural colour, and does not project more than usual into the anterior chamber. The pupil is greatly dilated, quite motionless under the stimulus of light, and somewhat irregular at its upper margin. There is slight conjunctivitis, but a greater degree of it at the inner canthus. The lens and all the humours are perfectly transparent, but the bottom of the eye, contrasted with that of the sound one, bears a dark, blackish appearance. The eyelids are neither œdematous nor inflamed, and leave the eye perfectly uncovered. The motions of the eye-ball are not perfectly under the control of the will, and are performed with some degree of pain and difficulty.

She had contracted a severe cold on the night of the preceding 6th of January; and she stated that the affection of the eye commenced soon after with severe pain in the right eye-ball, and right supra-orbital region, followed by vivid red-

ness of the organ; that this pain became excruciating at night; that, after continuing for several days, she lost it suddenly, and, about the same time, had the distinct sense of moderate enlargement and distention of the globe; and that the enlargement proceeded slowly, and loss of vision gradually increased, until an hour before her admission into hospital, when she suddenly observed that she was, to use her own words, "completely dark of the bad eye."

She was ordered to take a pill, containing three grains of calomel, and half a grain of opium, three times in the day: to have five leeches applied to the upper eyelid, the same number to the lower, and to be placed on low diet. Subsequently a blister was applied to the nucha. The mouth was kept affected till the 11th or 12th of October. On the 15th, we find a great improvement. A small blister was applied over the right supercilium, and an ounce of infusion of valerian given thrice daily.

On the 10th of November, vision was perfect, and the eye of the natural size and appearance. She was attacked, however, with some inflammation of the synovial membrane of the elbow, and afterwards of the knee-joint. A repetition of the calomel and opium set all right, and she was discharged cured on the 14th of December.

From a number of interesting observations on the case, by Dr. O'Beirne, we extract the following referring to the treatment.

"Mr. S. Cooper says: 'Beer has known great benefit sometimes produced by the submuriate of mercury, combined with digitalis, and a drink containing supertartrate of potassa, and borax.' In this passage we see that Beer used mercury in this disease as a sialogogue, and in no other way; and that he speaks of its use, in that form, merely as greatly benefiting, not as curing the disease. Another passage from the same work runs thus: 'At the first appearance of dropsy of the eye, many surgeons recommend mercurials, and cicuta; astringent collyria; a seton in the nape of the neck, and compression of the eye. However, Scarpa has never yet met with a single well-detailed history of a dropsy of the eye cured by these means.' Upon this passage I have only to observe, that, such as my researches on the subject have been, they support Scarpa's assertion so strongly, that I feel no hesitation whatever in asserting, that the present is the only authentic instance in which the disease has been completely cured by mercury, paracentesis, or any other means, single or combined. Indeed, Jourdan, in his article on this disease in the *Dictionnaire des Sciences Médicales*, after mentioning paracentesis, emetics, diuretics, and mercurial preparations, says, 'Mais il serait difficile de trouver une seule observation digne de foi, constatant l'efficacité de ces divers moyens.' Such being the actual state of the facts, it is manifest that the unexampled success of mercury in this case is owing to its having been employed, not as a diuretic, but as a sialogogue, and so as to bring the whole system, and consequently the eyeball, strongly under its influence."

SOME HINTS ON THE OPERATIVE SURGERY OF TUMORS. By ALEXANDER STEVENS, M.D. Surgeon to the New York Hospital.*

The following practical remarks are of that simple but useful character which is always agreeable to the Profession. They are plain hints given by an experienced man, the every-day knowledge applicable to every-day things, and, perhaps, more serviceable than very flashy information.

We agree with Dr. Stevens, that, after all, the most important facts to be

* New York Journal of Medicine, Jan. 1840.

learnt in respect to tumors, is how to remove them best by the knife. The more that is published on their external differential forms and features, and indeed on their intimate structure, the more rather than the less obscurity is thrown around them; and the multiplication of species and varieties has really seemed to be a multiplication of difficulties. It is to the operations on tumors, therefore, that Dr. Stevens turns, and we direct, for a few minutes, our readers' attention. We shall extract such hints as appear to claim our notice.

Extirpation of Encysted Tumors of the Scalp or Eyelids.

"The most common mode of extirpating these tumours is by dissecting them out; but this is not always easily done, especially if the tumour be very small. I have known half an hour occupied in removing a tumour, not larger than a pea, from the upper eyelid. Sir Astley Cooper advises that they should be cut into, and then torn out. If the first of these operations is attempted, the surgeon should be quite sure that he does not begin to dissect around the tumour until he has laid it quite bare. But I prefer the other method, and this is the way of proceeding that I would recommend:—At the first incision, I would cut freely into the sac of the tumour, seize the sac with the forceps, and pull it away either at once, or in different portions. If the sac resists, it will be because you have seized with the forceps one or more of the layers of cellular tissue which are always found surrounding the sac, and which are occasionally dense and strong. The connection of the sac with these layers is loose, but they adhere closely to each other. A few months since I removed, in two or three minutes, six of these tumours from the head of a young gentleman of this city. The rule, therefore, is this:—*cut into the sac and turn it out*; but do not attempt to tear away any thing else with the sac.

If it should happen that any portion of the sac has formed strong adhesions to the surrounding parts, an occurrence which is extremely rare, it is proper that you should understand that a perfect cure may be obtained by destroying the internal membrane (which is seldom thicker than parchment,) with a slight application of the kali purum, or of the nitrate of silver."

Extirpation of Solid Tumors.

Dr. Stevens remarks that, in the removal of these, unless they be malignant, and the abstraction of much of the circumjacent parts is necessary, there is one rule which should be written in letters of gold. "Did I say one rule? Let me rather say two rules, the first of which is this:—*cut down to the tumour*. This may seem to be a simple matter, so simple that the necessity of it must occur to every one. Be this, however, as it may, I do aver that in some hundreds of tumours which I have seen operated upon, and often by very skilful surgeons, the tumour has seldom been fairly exposed and laid bare before its dissection has been commenced. Vessels have been unnecessarily divided, and the whole operation has been protracted by the loss of blood, and the necessary application of ligatures to the arteries. How this happens I will now attempt to explain.

Let us take for illustration, the very common case of an enlarged lymphatic gland, in the neck. In its normal condition, this gland is supplied by one principal nutritive artery, and it is surrounded by an indefinite number of layers of cellular tissue. The layer next the gland embraces it like a shut sac; the exterior layers in contact with this, diverge and surround the adjacent parts. When the gland becomes enlarged from hypertrophy, or by becoming the seat of malignant deposits, the innermost layer of cellular tissue forms a sac, and its connection with the gland is usually loose, so that it may be readily stretched, or torn with the finger or the handle of the scalpel. The outer layers are also, in general, loose, and capable of being torn in the same way; but the manner in which they are applied to the gland, or rather to its sac, is worthy of parti-

cular attention, as affording a clue to the difficulties which are often encountered in these operations. The external layers of cellular tissue which cover the gland become, in the progress of its enlargement, stretched upon the exterior surface of the sac, being sometimes adherent to it, and to one another; from this point they diverge, passing to the anterior surface of some muscle, nerve, or blood-vessel, or to the posterior surface of some of these or of other organs. The tumour itself, in the meanwhile, receives no new vessel, other than that which originally supplied it, even though it may have grown so as to completely surround the carotid artery, the internal jugular vein, and their branches. Even in this case, the proper sac will be found interposed between these parts and the tumour. These vessels are, in other words, pressed into the side of the tumour, which, with its sac, becomes folded around them;—thus, strictly speaking, they form no part of the tumour, being exterior to the sac.

Keeping in mind the close application of several layers of cellular tissue, over the most superficial portion of the tumour, (the first and greatest enlargement of the tumour being in this direction, because it is there least opposed in its progress by the pressure of the surrounding parts,) and the separation of these layers on the lateral and deep-seated portions of the tumour, it is easy to understand:—

1st. That important blood-vessels, nerves, and other organs may be brought into close proximity to the morbid growth without absolutely touching it.

2nd. That if the surgeon, in cutting down upon the tumour, does not divide each and every layer investing the tumour before he begins to dissect around it, he cuts outside the sac, gets into some of the folds of cellular tissue, and encounters parts which ought not to be meddled with. He finds his knowledge of normal anatomy of little service to him; he gets away from the tumour, and makes a tedious and bloody operation in a case, where a different method of proceeding would have made every thing plain and easy.

Finally, when the tumour is removed and examined, folds of cellular tissue, perhaps portions of muscle, or of other parts, are found to have been removed with it, which can be torn off, and that very readily, from its external surface. Had the surgeon, in the first instance, cut down to the tumour after dividing every layer investing it, no more difficulty would have been experienced in tearing these layers from the tumour before it was removed than afterwards."

Sometimes, so transparent are the layers of cellular tissue, that it is very difficult to tell when the tumor is exposed. It is better for a young surgeon, and even for an old one, if he has any doubt in the matter, to cut a little into the tumour, in order to be sure that he has fairly cut down to it. Having reached the tumour, Dr. S. continues, if the cellular tissue can be torn by the fingers or by the handle of the knife, tear it; in cases where it cannot be so torn, cut in this manner: put the tumour upon the stretch, and cut lightly upon it near its points of attachment. Thus you avoid the possibility of any large blood-vessel or nerve being brought under the edge of your knife without being seen.

If the tumour is very large, or is deeply seated, it will, sometimes, be advisable, after having separated the attachments of the exterior portion of it as deeply as possible, to remove this portion. The removal of the remaining portion is thus much facilitated.

"In this manner, I safely removed a large tumour situated beneath the mastoid muscle, and which embraced the ninth pair of nerves in one part, and the common carotid artery, the internal jugular vein, the par vagum and œsophagus in another part; after very little cutting the sac was separated from these parts. I have never taken up the carotid artery for the removal of a tumour in the neck or face, nor do I believe that it is ever necessary. If the principles already laid down are carefully observed, there will be no danger of hemorrhage, nor yet of sloughing, from the nerves and blood-vessels being extensively laid bare;—laid

bare, indeed, they are, but their sheath still covers them, and is sufficient for their nourishment. I have, on several occasions, left them plainly exposed, from the sternum to a point above the bifurcation of the carotid artery, and have never known secondary hemorrhage to follow."

"In some cases of malignant tumours, not only the superficial, but other portions of the sac will be found closely adhering to the adjacent parts. If the tumour is in the vicinity of important parts, as in the axilla or neck, the plan I would recommend is this:—cut down until the knife fairly enters the diseased parts, then, by the sight and touch, decide where the tissues, adjacent to the disease, are entirely healthy; make a slight incision into them on the distal side of the tumour; continue to separate them with the handle of the scalpel and the finger. If you are among healthy parts, as you proceed the cellular and other tissues will yield to a very moderate degree of force; the separation of the veins, arteries, and, lastly, the nerves, will require more force, increasing in the two last named. These parts will be felt like strings holding the tumour, and are not easily separated. Be careful not to use much force in the separation of a large artery, and still more in the separation of a large vein. It is a great mistake to suppose that arteries when torn never bleed: I have often seen them bleed, *per saltum*, after having been torn by the finger. Still, they do not bleed so freely as when cut, and, moreover, their orifices are usually easy to be found, and as easily secured. They also stop bleeding much sooner, if an attempt is made to check the hemorrhage by pressure. A nerve no larger than a silk thread is half as strong; yet I have broken them when nearly as large as a small crow quill. My practice is to bring the resisting cord, be it vein, artery, or nerve, into view upon the palmar side of the fore-finger of my left hand, and then to seize it with the forceps, and divide it half an inch on the distal side of that instrument. If it is an artery, its patulous mouth will be seen, and a ligature may be applied before the forceps is removed. Thus you will conform to the *second rule*, that is, to remove the whole tumour and nothing more."

Dangers of Operations.

Dr. Stevens enumerates as the dangers to be immediately apprehended and guarded against—hæmorrhage—the introduction of air into the veins—and exhaustion.

Hæmorrhage.—On venous hæmorrhage we need say nothing.

"Arterial hæmorrhage may be diminished by tearing the vessels from the tumour. I have seen some surgeons tear the tumour itself out: this cannot always be done except to a limited extent, because a large number of parts are thus put upon the stretch at once. The better way is to hold the tumour, and tear off its investments, one portion at a time, with the fingers or with a strong pair of forceps: this method is also less painful than the former. Sometimes a vessel will retreat behind the ramus of the lower jaw, or into the axilla, and give rise to a troublesome bleeding. As these are usually the last attachments to be divided, it may be prudent to tie them before this division is made. I would also advise you always to divide and to secure the trunks of arteries, before dissecting among their branches. If you neglect this rule, you may cut and tie the same vessel half a dozen times, as I have often seen done. This is the reason some surgeons are constantly encountering tumours of extraordinary vascularity; this vascularity being, in fact, simply owing to their wandering away from the sac of the tumour, and dividing the vessels at each successive cut nearer and nearer to the heart."

An important means of diminishing hæmorrhage, in the removal of large tumours, is to subject them, for some hours previous to the operation, to the influence of cold applications.

Introduction of Air into the Veins.

"I have met with this occurrence only once in my practice, and that was in this Hospital about ten years since. I was in the act of removing the last of several of the deeper chain of lymphatic glands of the neck, which had become enlarged so as to interfere with the functions of deglutition and respiration, and was cautiously using the knife about half an inch on the outer side of the internal jugular vein. After a slight escape of venous blood, I heard a noise like that produced by drawing up with a syringe the last drop of water in a vessel. I immediately placed my finger over the spot from which the blood had issued, not being able to discover any orifice; and looking the patient in the face, asked him how he felt, he answered, 'very well.' Marks of consternation were visible around me, and many suggestions were made which I did not heed, but calling for an eyed probe, I directed a ligature to be passed through it. I applied to the internal jugular vein two ligatures,—one above, the other below the wound, directing them to be successively tightened. I then removed my finger, and proceeded with the operation. No bad consequences followed the application of the ligatures. The wounded vein appeared to be a branch of the internal jugular, but I did not think it safe to pass a ligature directly round the divided vessel, not liking to run the hazard of removing the pressure of my finger."

Dr. Stevens objects naturally to operating on a female about her menstrual period. He recommends the operator to have the instruments he wants within his own reach. He likes, in great operations, to have the assistance of a judicious medical practitioner, a personal friend, if possible, of the patient, to console, to watch, to support him.

"An adult, with ordinary powers of endurance, will, generally, sustain an operation of the average severity, during protracted suffering of one hour's duration,—rarely much more than this. A clammy skin, with coldness of the extremities, and a soft, thready pulse, indicate alarming exhaustion of the vital powers. But an experienced surgeon will judge most accurately from the expression of the countenance, from the eye and mouth especially:—the former partially loses its lustre, the latter becomes relaxed, until, finally, the eyes are turned upward, and the jaw falls, indicating an almost hopeless condition. The voice, also, is an index of the degree to which the vital powers are sunk; its tones become more and more feeble, until, at length, the patient can only speak in a low whisper, like one in the collapsed stage of cholera, and finally ceases to articulate at all. On the first approach of this state of things, I would advise you to give your patient a few minutes' respite. I give you the above indications, as being the only ones that occur to me as capable of being conveyed by language; your own observation will hereafter enable you to determine their real value. It is also important for you to know that a patient will endure a long operation much better by being allowed two or three short intervals in which to rally during the progress of an operation, it being more easy to prevent him from sinking, than to raise him from extreme prostration."

Finally Dr. Stevens counsels the surgeon never to undertake an operation against his own judgment, nor if possible assist at one.

DR. LAW ON DISEASE OF THE BRAIN, DEPENDENT ON DISEASE OF THE HEART.*

M. Legallois first drew attention to the fact, a striking and, practically, an important one, that hypertrophy of the heart disposes to apoplexy. Legallois

* Dublin Journal, May, 1840.

has been followed by others, and the doctrine has for some time been firmly established. The object of Dr. Law, is to extend the proposition, and to lead us to believe that disease of the brain may not only be occasioned by too great, but also by too little an impetus or quantity of blood, the result of cardiac disease.

He lays down the following propositions, which he supports with several cases and with much ability. For the facts and arguments we refer to our esteemed contemporary. The propositions themselves are sufficiently intelligible in their naked form. They are as follows:—

1st. The pathology of the brain is in many instances intimately connected with, and dependent upon, pathology of the heart.

2nd. To limit the pathological relation existing between these two important organs to apoplexy, the result of hypertrophy of the left ventricle of the heart, is to narrow it much within its true limits.

3rd. Ramollissement of the brain occurs in connexion with diseases of the heart, whose effect is either directly or indirectly to diminish the flow of blood to the head.

4th. This cerebral lesion may be connected with either disease of the aortic or mitral valve.

5th. Hypertrophy of the left ventricle of the heart, in order to produce apoplexy, must depend upon some impediment to the circulation, placed at a greater distance from the heart than the origin of the vessels which convey the blood to the brain.

6th. When ramollissement of the brain occurs, in connexion with an imperfect or patulous condition of aortic valves, the close analogy that we trace between the physical signs and constitutional symptoms of this lesion and hæmorrhage, as well as the results of treatment, render it very improbable that the disease of the brain is the result of too much blood driven to it, and with undue force.

7th. When ramollissement of the brain occurs, in connexion with disease of the mitral valve, the state of the pulse, which, as a diagnostic mark of this lesion, is habitually small, precludes the idea that the cerebral lesion is produced under the usual conditions of inflammation.

8th. While ramollissement of the brain occurs as a result of inflammation, hyperemia, &c., it occurs also under diametrically opposite circumstances.

9th. To confound such opposite modifications of disease, and to apply to them the same treatment, must necessarily lead to the most mischievous practical results.

10th. The circumstances under which we have seen ramollissement of the brain to take place, seem to identify it with gangrene, or death of a part consequent upon a diminution of its due supply of blood.

HOSPITALS OF MALTA.

There are four hospitals in Malta, one naval, one military, and two civil. One of the last is in Valetta, and the other in Citta Vecchia or Notabile, near the centre of the island. There is a civil hospital, also, in Gozo. At Floriana, adjoining Valetta, there is an asylum for the insane, and the town last mentioned is furnished with a public dispensary. The civil hospital in Valetta is as well furnished and as neatly kept as most of the institutions of the kind in England and France.

A University was established in the island, by the Jesuits, in the year 1592. It has included a medical department ever since its commencement. The Medical Faculty is composed of five Professors. The chairs are, 1st. Anatomy and Surgery; 2d. Physiology and Pathology, including Theory and Practice; 3d.

Botany, Medical Jurisprudence, and Natural History; 4th. Obstetrics; and 5th. Chemistry and Materia Medica.

At the commencement of the year 1839, the organisation and discipline of the University were remodelled, and some changes were made in the Medical School. The medical students receive constant instruction in the hospitals.

These particulars are extracted from a paper by Pliny Earle, M.D. in the American Journal of the Medical Sciences, for February, 1840.

SECTION OF THE HAMSTRING TENDONS, FOR CONTRACTED KNEE-JOINT.

By DR. BURLIGH SMART.*

CASE.—A scrofulous boy nine years old. The knee of the left leg began to enlarge, on each side of the ligament of the patella, six years ago, accompanied with a slight lameness in walking,—no pain, tenderness or redness. At this time there was a perceptible tightness of the tendons in the ham, and a disposition to flexion of the limb when in a recumbent posture. This thickening of the integuments of the joint, was followed by an apparent enlargement of the articular extremities of the bones of this joint. The enlargement, however, never became very great, sufficiently so, to render it distinctly perceptible at sight. About two years since, the boy was found to be affected with an angular anterior curvature of the spinal column, at the junction of the lumbar, with the sacral vertebrae; and the knee-joint more flexed, other appearances of the joint remaining the same. At this time the general health, always good before, appeared to be affected—some loss of flesh and strength, and restless nights. By the use of moxa and caustic issues, each side of the angular projection, kept open for about eight months, and the internal use of sarsaparilla, soda, and the hydriodate of potassa, the disease of the spine was apparently cured. But now there was a considerable degree of stoop, or inclination forward, given to that portion of the trunk above the pelvis. In this state Dr. Brown, of Boston, being consulted, advised the application of a mechanical apparatus, to be constantly worn, together with the use of an inclined plane; which seemed to afford important aid in rectifying the forward inclination of the trunk. But as the straightening of the spinal column progressed, an increase of the flexion of the knee was observable.

For the period of about five years, this lad, in walking, has been able to bring only the toes and ball of the foot to the ground; the heel not coming to the ground, in the ordinary step, by the distance of between two and three inches, the latter part of that period of time. The leg has been a little smaller than the other, below the knee, ever since the commencement of the distortion.

On the 15th of November, the tendons of the biceps flexor cruris on the one side of the popliteal depression, and of the semi-tendinosus and semi-membranosus on the other, were divided, about two inches above their insertion. The operation was performed with a slightly curved and sharp-pointed bistoury, which was introduced with the flat surface parallel and close to the inner side of the tendons, with the point upwards, and penetrating sufficiently deep to hook the point of the instrument under the tendon, by gently depressing the handle and turning the blade of the bistoury on its own axis, until it revolved a quarter of a circle, and the edge was presented transversely to the tendon. Then, by a gently sawing motion, depressing the handle, and at the same time elevating the point of the instrument, the parts were divided with but very trifling pain.

The punctures were accurately closed by court and adhesive plaster, and a

* American Journal of Medical Sciences, Feb. 1840.

compress and bandage were applied, with a crooked splint outside the bandage; the limb having been extended about two inches, measured at the heel, before the dressings were applied. The flexion of the leg previous to the operation was about 40 degrees.

The 8th day subsequent to the operation, no pain or troublesome inflammation having supervened, a carved wooden splint, with its cavity padded, and having a hinge joint at the knee, by which the two parts were connected, was applied and confined with broad padded straps passing from one side of the splints to the other, fastening with buckles above and below the knee. On the posterior surface of the splints was fixed a screw, connecting the two splints; by the daily turns of which, the limb was gradually extended until it became very nearly straight, which was effected in a fortnight after the extending apparatus was applied, and three weeks after the operation.

This patient commenced walking as soon as the extending apparatus was applied. He is now able to walk with or without it, bearing his weight on the entire length of the foot; he can place the heel on the ground at every step, which he had not been able to do for about five years.

OBSERVATIONS ON THE EMPLOYMENT OF CIMICIFUGA IN THE TREATMENT OF CHOREA.*

The *cimicifuga*, known in America under the common name of *black snake root*, has been recommended by Dr. Young of Pennsylvania, as a remedy for chorea. Dr. Kirkbride has just published seven cases in which he tried it. He concludes them by observing:—

“We feel satisfied of the value of the *cimicifuga*, in the treatment of chorea, and disposed to attribute to it powers in some other affections in which we have not yet had an opportunity of giving it a satisfactory trial. After the details we have given, it is hardly necessary to say, that we do not look upon it as a specific in chorea. We have scarce ever met with a case where the primary treatment was not plainly indicated by the disordered digestion, the loaded bowels, the pain or heat of the head, and the languid circulation of the skin. But it is also right to state, that where these symptoms have been properly treated, the involuntary muscular movements, have often continued unchanged, until after the employment of the black snake root. Purging we have always used before the *cimicifuga*, and general frictions with salt or the flesh-brush, and punction with croton oil over the spine, we have believed to be of much value in the chronic cases. Of the two preparations we have employed, we are disposed to give the powdered root the preference, and now regret that we did not administer large doses in that form in our fifth case, where the decoction certainly had no effect.”

CURE OF SQUINTING BY DIVISION OF THE RECTUS INTERNUS MUSCLE.

This operation is beginning to attract attention, indeed it may be looked on as already an established one. Proposed, and first, we believe, executed by Dieffenbach, it has been taken up by Dr. Franz, and by several surgeons in town, and the cases in which it has been resorted to are respectable in appearance and number.

As Dr. Franz's cases have had the priority of publication, we think it only fair to notice them. We shall select the first case.

* American Journal Medical Sciences, Feb. 1839.

CASE.—Louisa M'Cleish, aged 18, affected with squinting since the age of two years. "On examination, I found the left eye slightly inverted, but the right eye so much turned inwards, that one third of the cornea was hidden by the inner canthus. She stated that the right eye was larger than the left, having been frequently told so by others; but this I found to be an error, probably arising from the circumstance that so little of the cornea was visible, whilst a large portion of the sclerotica presented itself. With considerable exertion of will she was scarcely able to direct the right eye so as to look straight before her, and could not in the slightest degree move the globe towards the exterior angle. When not under the influence of the will this eye instantly returned to its usual position inwards. On closing the left eye she could only distinguish large objects, and was not able to read even the largest print.

Having provided myself with three assistants, the patient, whose left eye was closed by a bandage, was seated facing the light with her head inclined backwards, in which position it was retained by an assistant, who at the same time fixed the upper eyelid with a retractor. A second assistant kneeling before the patient, fixed the lower lid by means of a retractor, held in his right hand: the eyelids being by these means well secured and drawn asunder, I perforated the conjunctiva at the inner corner of the eye close to the eye-ball, with a small and very sharp hook, and gave it to the second assistant to hold with his left hand, with which he was, by means of this hook, to draw the globe outwards. I next made a semicircular incision with a scalpel through the conjunctiva, about six lines in length; then dissecting through the subjacent cellular tissue, exposed the internal rectus muscle, and terminated the operation by dividing it close to the sclerotica with a very small pair of curved scissors, the one blade of which was passed beneath the muscle. The duty of my third assistant was to hold the patient's hands, reach me the instruments, and attend to the bleeding, which in this case was very inconsiderable. On the removal of the hook from the conjunctiva, the eye-ball was no longer inverted, but stood in the proper position, the pupil occupying the centre of the eye. The edges of the wound in the conjunctiva were brought together by the motions of the eye itself, which were perfectly free in all directions, except inwards. Cold water dressings were ordered, and a common draught. The patient then walked home."

Mr. Mayo, Mr. Liston, and others, have performed this operation. It is probable that the simple division of a single muscle will be found inefficient in some, if not in many, cases, and no doubt experience will suggest modifications in the method.

STUDENTSHIPS IN ANATOMY.—COLLEGE OF SURGEONS.

It is with great gratification that we publish the following. The President and Council have great pleasure in announcing to their members, that three Studentships in Human and Comparative Anatomy have been instituted by the College, to be held respectively for the term of three years, with the annual stipend of one hundred pounds attached to each studentship; and that, at the instance of the Director-General of the Medical Department of the Army, the Physician-General of the Royal Navy, and of the Chairman of the Honourable East India Company, the General Commanding the Army in Chief, the Lords Commissioners of the Admiralty, and the Court of Directors, have, with the view of promoting the objects of the College, been pleased to place at the disposal of the President and Council an Assistant-Surgeoncy, in each service, once in three years, for such of the said Students as may be considered worthy of these honourable distinctions.

The President and Council have also the pleasure to announce, that, with the view of

rendering the prizes granted by the College more worthy of competition amongst their younger members, they have augmented the Collegial (Triennial) Anatomical Prize from thirty to fifty guineas; and have added ten guineas to the like sum, allotted by its founder, to the Jacksonian (Annual) Surgical Prize.

(By Order)
May, 18, 1840.

EDMUND BELFOUR,
Secretary.

RETURN OF CASES OF HYDROCELE TREATED AT THE NATIVE HOSPITAL, CALCUTTA, AFTER THE PLAN OF J. R. MARTIN, Esq. BY A RETAINED INJECTION OF SOLUTION OF TINCTURE OF IODINE, from 9th March 1832, to 31st December, 1839.

From 9th March to the 31st December 1832	..	32 Cases.
For the year 1833	..	49 "
" " 1834	..	86 "
" " 1835	..	121 "
" " 1836	..	332 "
" " 1837	..	528 "
" " 1838	..	585 "
" " 1839	..	660 "

Grand Total 2393 Cases.

Of the total cases treated there were:—

Hindooes	1,265
Mahomedans	1,076
Christians	52

The failures from first to last would appear to be about one per cent., or rather under it. There were, of reported failures, six cases, up to 1837, of which three were out of twelve cases treated experimentally by undiluted port wine instead of the iodine solution. Nine cases were treated at once successfully, up to 1837, by the iodine solution, in which the solution of port wine and sulphate of zinc had failed. Of late years it would appear that a large proportion of those treated are natives of Orissa, where hydrocele would seem to be endemic. No ordinary complication has interfered with the operation, and it has now superseded all others in India.

N.B.—The details of treatment will be found at pages 204 and 411 of the 7th volume of the Medical Transactions of Calcutta, and at page 12 of the Quarterly Journal of the Medical and Physical Society of this City.

P. O'BRIEN, 1st. Assist. Native Hospital.

(A true copy)

J. R. MARTICE.

Native Hospital Calcutta, 1st. January 1840.

UNFERMENTED BREAD.

The profession is aware that Dr. Whiting, a few years ago, took out a patent for bread prepared without yeast, by combining muriatic acid and carbonate of soda, so as to produce common salt in the dough. From some cause or other, Dr. Whiting's bread did not take with the public, though it certainly was a wholesome composition for weak stomachs. Mr. Dodson, of Blackman street, Southwark, has much improved upon Dr. Whiting's formula. We have been using his bread, prepared in the same manner as Dr. W's., but with larger proportions of the muriatic acid and soda, for some months, as have several of our friends and patients. We can speak to its wholesome qualities, and to the ease

with which it is digested, without turning acid on the stomach. We recommend our dyspeptic friends to try it—especially the brown bread, of which all our patients highly approve. Mr. D. has extended the same process to several species of pastry, and, we think, with much success.

TESTIMONIAL TO SIR B. C. BRODIE, BART.

All who are anxious to see professional honour and talent appreciated, will be glad to find that a subscription has been set on foot, for the purpose of presenting a Testimonial to Sir Benjamin Brodie, on his retirement from the office of Surgeon to St. George's Hospital. The motives which led to that step were so conscientious, and the step itself so unusual a sacrifice of emolument and influence to a fine sense of propriety, that it would be a wrong to Sir Benjamin Brodie individually, and a more serious wrong to the best interests of the profession, were it allowed to pass unsignalized by some exhibition of public feeling. Sir Benjamin Brodie's retirement from the hospital is, unfortunately, the termination of the more active and onerous part of his career, and in receiving a testimonial on such an occasion, he may be said to obtain during his life-time something like posthumous fame. And who can merit that more than Sir Benjamin Brodie has done? With a zeal that never flagged, and industry that would not submit to the restrictions demanded by a constitution far from robust—with a singleness of purpose, we may add, of heart, which those who know him best, are the foremost to acknowledge—with a quickness of observation, precision of ideas, and correctness of conclusion that are admirably qualified for scientific investigations, Sir Benjamin Brodie commenced and carried on, with a success that needs no chronicle, those pathological researches which have been the foundation of his fame and fortune. A Testimonial to the man, is affixing the seal of public approbation on the qualities that made him what he is, qualities that, so esteemed, will become the heritage of younger minds. And what can be more agreeable than rewarding past and fostering future merit in the same breath?

On the students, young and old, of St. George's Hospital, Sir Benjamin Brodie has a peculiar claim. Who does not know the urbanity of his demeanour, the punctuality of his attendance, the spirit of observation that he promoted, the studies that he encouraged, the example that he set? No man was, in every sense, more thoroughly the student's friend than Sir Benjamin Brodie has been. On the look out for merit, he always encouraged, always fostered, and not seldom fed it. Nor was his the cheap encouragement of words only, the open purse has often seconded the earnest exhortation; and the aid which he has given to the professional struggle of the young man, has been exceeded only by the munificence which relieved the distresses of the old.

To those who *know* Sir Benjamin Brodie, this picture will not seem overcharged. If any think it so, it is because a modesty, which in such cases amounts to a fault, and an aversion to publicity which is unjust to its possessor, have but too effectually concealed from common observation the most liberal feelings and most generous acts.

We trust that the subscription list will evince the respect that the profession entertains for one who still adorns it. May this Testimonial, the crowning honour of one scene of usefulness be the introduction to another. May the ease and dignity of a private practice, which, however great, is still inferior to his merits, enable its possessor to accumulate his experience, arrange its treasures, and leave to us as a legacy some, at least, of the knowledge he has hived, as well as the honourable name of which his professional and lineal descendants may be proud.

THE RESPIRATOR.

It is unnecessary for us to speak in favour of this ingenious and invaluable instrument. The experience of the profession has established its eminent utility as a preventive, if not also as a curative means. But we are anxious to introduce to our readers some modifications which its able inventor, Mr. Jeffreys, has made in it. *First*, the large sale, and improvements in the manufacture have enabled him to construct a cheap, yet most efficient instrument for the poor. The mechanic or the labourer may now obtain one for the low sum of seven shillings; while for females the price is only six shillings. This is an inestimable boon to the less affluent classes. It is unnecessary to point out the benefits that must accrue to many a family, from the head of it being enabled to pursue the occupation on which his and their subsistence depends. *Secondly*, a less important, yet not contemptible alteration has been made in the construction of the more expensive instruments. A light kind of scarf has been attached to the front, by which the *bizarrie* of their appearance is removed. Our fair patients, at all events, will bless Mr. Jeffreys for this. In conclusion, we would entreat our professional friends to avail themselves of this admirable adjuvant to their previous stock of remedies.

BIBLIOGRAPHICAL RECORD.

AN ATLAS OF PLATES ILLUSTRATIVE OF THE PRINCIPLES AND PRACTICE OF OBSTETRIC MEDICINE AND SURGERY. WITH DESCRIPTIVE LETTER PRESS. By *Francis H. Ramsbotham*, M.D. Member of the Royal College of Physicians, Physician to the Royal Maternity Charity, and Lecturer on Obstetric and Forensic Medicine at the London Hospital, &c. London: J. Churchill, 1840. Parts IV., V., and VI.

This is really a very meritorious, and likely to prove a very useful work. The Parts are published with regularity, and their execution is equal to that of their predecessors. The Plates are extremely good.

The commencement of the Fourth Part is occupied with the description of the decidua, and the ovum with its accompaniments. The description of "Labour" is then taken up and pursued through the succeeding Parts.

We observe that Dr. Ramsbotham doubts, as most anatomists of the present day do, the accuracy of Hunter's view of the mode of formation of the "Decidua Reflexa." For, as he observes, a prolongation of the outer membrane has been frequently observed passing a little way into each Fallopian tube, which could not be the case were the internal merely a duplicature of the outer layer.

We beg to reiterate our favourable opinion of the Work, and to wish its zealous and talented author every possible success.

1. Dictionary of Geology and Mineralogy, comprising such terms in Botany, Chemistry, Comparative Anatomy, Conchology, Entomology, Paleontology, Zoology, and other Branches of Natural History, as are connected with the Study of Geology. By *WILLIAM HUMBLE*, M.D. Octavo, pp. 279. In closely-printed double columns. Washbourne, Salisbury Square, Fleet Street. March, 1840.

2. A Series of Anatomical Sketches and Diagrams, with Descriptions and References. By *THOMAS WORMALD*, Assistant Surgeon and Demonstrator of Anatomy at St. Bartholomew's Hospital, and *ANDREW MELVILLE M'WHINNIE*, Teacher of Practical Anatomy at St. Bartholomew's Hospital. Quarto, pp. 16. Price 4s. No. 2. Highley, 1840.

3. *The India Journal of Medical and Physical Science* for August, September, and December, 1840. *In exchange, the India Review for same months*

4. Statistical Reports on the Sickness, Mortality, and Invaliding among the Troops in Western Africa, St. Helena, the Cape of Good Hope, and the Mauritius. Prepared from the Records of the Army Medical Department and War-Office Returns. Presented to both Houses of Parliament. 4to, 1840. Presented to the Senior Editor, by Sir JAMES M'GREGOR.


5. First Principles of Surgery; being an Outline of Inflammation and its Effects. By GEORGE T. MORGAN, A.M. formerly Lecturer on Surgery in Aberdeen. Part 3, 1840. Highley, Fleet Street. MacLachlan and Stewart, Edinburgh.

6. *The Phrenological Journal* for April, 1840. *In exchange.*

7. Odontography; or a Treatise on the Comparative Anatomy of the Teeth, their Physiological Relations, Mode of Development, and Microscopic Structure, in the Vertebrate Animals, illustrated by upwards of 150 plates. By RICHARD OWEN, F.R.S. Hunterian Professor to the Royal College of Surgeons, &c. Part the First, containing seven sheets of letter-press, and fifty plates. London, Bailliere; Paris, Bailliere; Leipzig, Wergel, 1840. Price, plain plates, 1l. 11s. 6d. Quarto proofs, 2l. 12s. 6d.

8. *Guy's Hospital Reports*, No. X. April 1840. Edited by Drs. BARLOW and BARRINGTON. Octavo. Highley, 1840.

9. A System of Practical Medicine, comprised in a Series of Original Dissertations. Arranged and edited by ALEX. TWEDDIE, M.D. F.R.S. &c. Vol. I. pp. 440. Very close type. Whittaker, 1840.


 This volume contains, "Introduction," Dr. Symonds—"Inflammation," by Dr. Alison—"General Doctrine of Fever," by Dr. Christison—"Continued Fever," Ditto—"Plague," Dr. Shapter—"Intermittent Fever," Ditto—"Remittent Fever," Ditto—"Yellow Fever," Ditto—"Infantile Gastric Fever," Dr. Locock—"Hectic Fever," Dr. Christison—"Small-pox," Dr. Gregory—"Measles," Dr. George Burrows—"Scarlatina," Ditto—"Puerperal Fevers," Dr. Locock—"Diseases of the Skin," Dr. H. E. Schedel.

10. Parochial Medical Relief considered in a letter to the "Poor-Law Commissioners," developing an entirely new System of Medical Remuneration, alike conducive to the Interests of the Rate-Payers, the well-being of the Poor, and the respectability of the Profession. By E. T. MERRIDITH, M.R.C.S. Octavo, pp. 35. Price 1s. 6d. Highley, Fleet Street. May, 1840.

11. Observations on the Diseases incident to Pregnancy and Childbed. By FLEETWOOD CHURCHILL, M.D. &c. &c. Octavo, pp. 463. Keene and Son, Dublin. May, 1840.

12. Memoir on Extra-uterine Gestation. By Dr. WM. CAMPBELL, of Queen's College, Edinburgh, &c. Octavo, pp. 154. Black and Co. Edinburgh; Longman, London. May, 1840.

13. An Address delivered at the Anniversary Celebration of the Birth of Spurzheim, and the Organization of the Boston Phrenological Society, December 31, 1839. By GEORGE COOMBE, Esq. Boston, 1840.

 This as might be expected, is an eloquent address, with a dash of enthusiasm.


14. A Letter to Sir Benjamin Brodie, Bart., containing a Critical Enquiry into his "Lectures illustrating certain local Nervous Affections." By WILLIAM GOODLAD, M.R.C.S. &c. &c. Octavo, pp. 154. Longman and Co. May, 1840.

15. An Essay on the Treatment and Cure of Pulmonary Consumption. By GEORGE BODINGTON, Surgeon. Duodecimo, pp. 60. Longman and Co. May, 1840.

16. A Practical Work on the Diseases of the Eye, and their Treatment, Medically, Topically, and by Operation. By FRED. TYRRELL, Senior Surgeon to the Royal London Ophthalmic Hospital, Surgeon to St. Thomas's Hospital, &c. Two Volumes, 8vo, with plates. Churchill, London. May, 1840.

17. A Treatise on the Physiological and Moral Management of Infancy. By AND. COMBE, M.D. Octavo, pp. 374. MacLachlan and Stewart, Edinburgh. 1840.

18. Official Report of the Medical Topography and Climate of Calcutta, with brief Notices of its prevalent Diseases, Endemic and Epidemic. By JAS. RANDAL MARTIN, Presidency Surgeon, and Surgeon to the Native Hospital. Printed by order of Government. Calcutta, 1839.

 We noticed the first edition of this valuable report in our Journal. The present is greatly enlarged and entirely re-constructed and improved. The talented author has returned to his native land, after a hard service of a quarter of a century in India.

19. The Physiognomy of Mental Diseases. By Sir A. MORRISON, M.D. No. 19. Price 3s. 6d. London, May, 1840.

20. The Madras Quarterly Medical Journal. Edited by SAMUEL ROGERS, Assistant Surgeon, Madras Establishment. Vol. I. for January, April, July, and October, 1839.

21. A Popular View of the Anatomy of the Human Body. By JAMES DOUGLAS, A.M. Surgeon. Duodecimo, pp. 172. Glasgow. May, 1840.

22. Vital Dynamics. The Hunterian Oration before the Royal College of Surgeons in London, 14th Feb. 1840. By Jos. HENRY GREEN, F.R.S. &c. Octavo, pp. 125. Pickering, London, 1840.

23. The Philosophy of Instinct and Reason. By J. STEVENSON BUSHMAN, M.D. Duodecimo, pp. 316. With Plates. Edinburgh, 1838.

24. An Atlas of Plates illustrative of the Principles and Practice of Obstetric Medicine and Surgery; with Descriptive Letterpress. By FRANCIS RAMSOTHAM, M.D. &c. Nos. 4, 5, and 6. Churchill, London, 1840.

25. The Library of Medicine, arranged and edited by ALFRED TWEEDIE, M.D. Vols. II. and III.

26. Considerations sur la Structure de l'Encephale et sur les Relations du Crane avec cet Organe. Par le Docteur FOVILLE. Extract de l'Experience, du 16 Avril, 1840.

27. A Practical Essay on Delirium Tremens, written principally with a view to elucidate the division into distinct stages, &c. By ANDREW BLAKE, M.D. Physician to the Nottingham General Lunatic Asylum, &c. Second Edition. Octavo, pp. 112. Longman and Co. 1840.

28. Fisher's Historic Illustrations of the Bible. Principally after the Old Masters. Part I. Price 2s. Fisher, Son and Co., Newgate Street. 1840.

 The plates are beautifully executed.

29. Illustrations of Cutaneous Diseases. A Series of Delineations of the Affections of the Skin, in their more interesting and frequent Forms; with a Practical Summary of their Symptoms, Diagnosis, and Treatment, including appropriate Formulae. By ROBERT WILLIS, M.D. &c. Part XVI. June 1. Price 5s. Bailliere.

30. The Transactions of the Provincial Medical and Surgical Association. Instituted in 1832. Vol. VIII. Churchill, London. June, 1840.

31. Practical Remarks on the Causes, Nature, and Treatment of Deformities of the Spine, Chest, and Limbs, Muscular Weakness, Weak Joints, Muscular Contractions, and Stiff Joints; containing the Results of the Author's Experience, and shewing the Advantages derived from the Modes of Treatment which he has recently introduced. With illustrative Plates and Cases. By JOSEPH AMESBURY, Surgeon, &c. late Lecturer on Orthopaedic Surgery. Quarto, pp. 192. With numerous Plates. Longman and Co. June, 1840.

32. Cursory Notes on the Morbid Eye. By ROBERT HULL, Physician to the Norfolk and Norwich Hospital, &c. Octavo, pp. 249. Longman and Co. 1840.

33. The Retrospective Address on Surgery, from July, 1836, to July, 1839. Delivered before the Provincial Medical Association at Liverpool, on the 24th July. By S. H. JAMES, Esq. Surgeon to the Devon and Exeter Hospital. Octavo, pp. 92. Worcester, 1840.

EXTRA-LIMITES.



OBSERVATIONS ON THE OXIDE OF SILVER; AND AN ABSTRACT OF THE CASES IN WHICH IT HAS BEEN ADMINISTERED. By C. H. B. Lane, Esq.

THE use of silver as a medicinal agent is of ancient date. By Avicenna it was given in the metallic form, as a remedy for palpitation of the heart and fætid breath. Takennius used it combined with the cinnabar of antimony in melancholia, epilepsy, and mania. By Angelus Sala it was highly spoken of in the treatment of cerebral and uterine diseases. Mereat has recommended nitrate of silver strongly, as a remedy for hysteria and epilepsy, and relates a case of the latter of thirty years' standing, in which it effected a cure. It is not as much resorted to for internal administration as it was some years back, when its use was sanctioned by the names of Nord, Sprengel, Butini, Esquirol, Lombard, Baillie, Sims, and others. There are, however, still some advocates for its use in epilepsy and gastric affections, most especially Dr. James Johnson; and it has been given in dysentery and cholera. In 1836, M. Serre, of Montpellier, strongly recommended the various salts of silver, and also the oxide, as anti-syphilitics, but the evidence he advances of their utility does not appear satisfactory on his own showing, and M. Ricord's report on the subject is unfavourable.

The nitrate has been the form in which silver has been mostly employed; we owe it to alchymical research which, though futile as to its immediate object, has had the beneficial result of affording us numerous powerful weapons wherewith to combat disease. As a local application it is in very general use; it acts chemically as a caustic, and is supposed to possess peculiar stimulant powers in addition, which opinion was originally advanced by Mr. Higginbottom, whose work is, I believe, the only English monograph on the subject which we possess. In the present day there has been some tacit acknowledgment of a contra-stimulant influence, but it is vague and undefined. I do not believe nitrate of silver to possess any stimulant action beyond that connected with its causticity: any destructive process tends to excitement if reaction takes place, and will be indicated by pain, that vigilant sentinel of our corporeal welfare. The action of silver I consider as directly sedative as that of lead, only differently evinced. While the primary sedative action of lead is on the nerves of animal life, perhaps that of silver is in special relation to those of organic life, by which the capillary circulation is believed to be governed—this refers to the primary effect, for once the constitution affected, the sedative impression is conveyed to the nervous centres, and the further results may be varied. We will take a case of morbid vascular action occurring in a cutaneous surface, with a view to contrast the respective therapeutic action of lead and silver. We find the application of acetate of lead attended by diminution of sensation, and if the surface be at all abraded, some degree of pain may ensue from the contact of the foreign body, as also from the stimulation of the free acetic acid. The continued application of the lead may annihilate the sensation of the part, and that safeguard of the surface being destroyed, organic life is but too readily arrested, an evil to be carefully avoided. Suppose, on the other hand, we apply the nitrate of silver to what is termed an inflamed surface. It acts primarily as a caustic, becoming decomposed and combining with albumen, first as a chloride, and subsequently as an oxide, constituting a foreign body which protects the surface from external impressions, a mechanical effect well described by Higginbottom; and this process is attended with more or less pain in proportion to

the liability of the surface to impression either from abrasion or excited sensibility: slight organic action even may ensue, causing serous effusion. The excitement, however, generally quickly disappears, and a distinct therapeutic action is evinced. The morbid state, whether demonstrated in increased capillary circulation, secretion, or absorption, subsides; when the affection is local it is often quickly subdued. In the incipient stage of anthrax there is no local application which equals nitrate of silver in efficacy; in several cases where freely applied, I have seen it arrest the local mischief which there was every reason to suppose would have otherwise gone through the tedious process of sloughing—suppuration and ulceration—and this was what induced me first to suspect that more than mere stimulation took place. Looking at the medicinal influence of nitrate of silver in erysipelas, and various forms of ulcer, in which the existence of excitement to a greater or less extent cannot be denied, I think we shall be still further inclined to lay aside the theory of mere stimulation.

The previous causticity of the lunar caustic is most advantageous in many cases, as for example, in the application to chancres and in chronic ophthalmia, where the destruction of morbid growth is desirable before there can be any susceptibility of sedative impression. There appears but little doubt that the application of nitrate of silver to syphilitic sores, if adopted while the affection is yet local, may preclude the necessity of constitutional remedies by destroying the centre of morbid action. Yet, on the other hand, the production of the sedative effect alone is often more advantageous, for where the organization is weak, the primary destructive causticity is badly borne, though, despite that inconvenience, nothing has been hitherto substituted which will as completely answer the purpose as lunar caustic carefully applied.

The question now is—can the caustic stimulation be avoided, and a simple sedative action be instituted through the agency of silver?—to this I would reply in the affirmative! I would recommend the substitution of the oxide for the nitrate, which stands in the same relation thereto as the oxides of antimony and mercury do to tartar emetic and corrosive sublimate respectively. Thus we shall have a mild and manageable preparation—entirely devoid of causticity, which my brief experience leads me to hope will be found of high utility both as a local and internal medicament.

I have applied an ointment of oxide of silver with decided effect in the various stages of gonorrhœa, and with but little inconvenience, beyond what might be fairly attributed to the mere mechanical irritation of the bougie. Over the nitrate it has the great advantage of not producing the caustic irritation by which, at the same time that the morbid secretion may be arrested by a process resembling tanning of the urethral lining membrane, there is considerable additional probability that metastasis of the irritation will ensue. The application of the oxide of silver, on the other hand, may be resorted to so as gradually to subdue the disease. I would not, however, by any means recommend its employment during the very acute stage while much constitutional irritation exists, and, subsequently, only as an auxiliary to the usual medicinal treatment. In chancres, I am convinced that I have seen the most beneficial results attend the application of the ointment. I have often found the sanative effect surprisingly accelerated after the failure of other remedies, and its use is not attended with pain. It is the oxide of silver which exists in Mr. Guthrie's black ointment, named by some "*infernal*" though far from violent in its action, and I believe available to a much greater extent than usually supposed. His formula consists of ten grains of nitrate of silver, fifteen drops of solution of lead, and a drachm of lard. The oxidization is effected by trituration and exposure to the atmosphere and light. A much readier mode of preparing it is from the oxide itself. The lead promotes sedative action but is not essential to it.

We will now turn to the internal administration of silver. The use of the

nitrate has been strongly recommended by many in nervous diseases of all kinds, and also in gastric affections, which are especially states of excitement, though of course constitutional debility may exist, as is often the case. With the strong conviction of the powerful sedative influence of silver used externally, I could not doubt that the result of its internal administration would correspond from analogy with lead, of which the powerful influence over the nervous centres is indisputable. With respect to the nitrate, the risk of cutaneous discoloration has always been a great objection to persistence in its use, when it was deemed requisite for any lengthened period. Now the nitrate is a soluble salt, which is changed by the free hydrochloric acid of the gastric juice into a chloride: this is taken into the circulation, and when conveyed to the cutaneous surface is converted by its strong affinity for albumen and by the action of light into an oxide, which, however, cannot apparently permeate the capillaries, or we might expect it to be removed at a future period, as is the bile in jaundice. The oxide of silver, however, remains indelibly fixed; nor am I aware of any recorded instance of its perfect re-absorption. Again, the nitrate cannot be administered freely on account of its causticity, so that a full sedative impression is not obtained, perhaps even when the mischief of discoloration is done. I think I have fair reason to expect that the above evils would be avoided by substituting the oxide for the nitrate of silver. The transmutation of the salt in the cutaneous surface would then be anticipated, and its transmission thereto prevented; for as I just remarked, the cutaneous capillaries do not appear permeable to the oxide. We should, by freer administration, more readily impart the sedative impression through the medium of the nerves of the stomach, like that of other medicines of the same class. It was suggested to me that the oxide would probably be decomposed by the free acid of the gastric juice, but, from experiments I have made, I do not anticipate such a result. Experience alone can test the truth of the theory—to that I appeal, and by it am willing to abide. If it be successful, I shall have the satisfaction of adding to our store a therapeutic agent of peculiar utility.

The readiest mode of preparing the oxide of silver is by acting on the nitrate with potassa, we may remark that the grey nitrate of silver contains some portion of the oxide. The admixture of two drachms of the hydrate of potass with half an ounce of nitrate of silver will yield about three drachms of the substance in question. Its internal administration may generally commence in the dose of half a grain. I have not carried it beyond six grains in the twenty-four hours. I have used the ointment of oxide of silver with the proportion of from five to ten grains to the drachm of lard.

I will now briefly refer to the cases in which the remedy has been used within my own knowledge during the last twelve months. The unsuccessful cases are noticed in common with the successful ones, in order to afford some direction as to when the use is likely to be attended with advantage. A greater aggregate of success has been obtained than might have been anticipated from a mere experimental enquiry, which strongly encourages us to its continuance.

Case 1.—Mr. J. had two syphilitic sores on the glans penis which could not be got to heal during four or five weeks, though a variety of local applications were resorted to. With the use of the oxide of silver ointment they healed in ten days. At a subsequent attack he himself suggested the use of the ointment, which was used with the same satisfactory result. He did not take mercury.

Case 2.—Senor G. was labouring under exceedingly irritable chancre of phagedenic tendency. Black wash and ointment of the nitric oxide of mercury were ordered for him by Mr. Guthrie, who saw him with me in consultation. At the end of a fortnight he was worse rather than better. I then used the oxide of silver ointment, which effected the healing process in a week.

Case 3.—Mr. M. had syphilitic sores on the prepuce. Caustic was applied in the first instance, and subsequently the oxide of silver ointment daily. The chancres were well within a week, but he subsequently suffered severely with secondary symptoms.

In many other cases of syphilis I have since been constantly in the habit of using the ointment in question, and have generally found it answer better than any other local application. Also other medical men, who have been induced to try it by my recommendation, have expressed themselves much pleased with its efficacy.

Case 4.—Gleet and stricture. The application of the ointment with a bougie produced temporary benefit only—it occasioned no pain.

Case 5.—Mr. W. a gentleman of plethoric habit had the ointment applied a fortnight from the first commencement of gonorrhœa. No pain was experienced at the time, but there was much subsequent irritation.

Case 6.—F. J. a newly-married man, laboured under severe gonorrhœal symptoms, apparently caused by leucorrhœa in his wife. He was at intervals under treatment with the local application of oxide of silver during a period of five weeks, always with marked relief, but the complaint kept recurring till he became insensible to the exciting cause. He was a patient of Mr. P. B. Lucas.

Case 7.—S. L. had been affected with gonorrhœa some days, when the ointment was first applied. The appearance of glandular irritation in the groin precluded its continuance.

Case 8.—J. M. became affected with purulent discharge, ardor urinae, and chordee, four days after connexion. He was ordered an aperient, and the ointment was applied three successive days, when he reported himself well. He was a patient of Mr. P. B. Lucas.

From these and other cases of the kind, in which the ointment was used without resorting to other remedies at the same time, I should not feel induced to rely on it solely in cases of urethral discharge, but am satisfied that it will often be found an useful adjunct in cases of that description.

Cases 9 and 10.—Extensive ulcers of the legs of old-standing were benefitted to a slight extent, but the use of the ointment was not persisted in.

Case 11.—Rachel G——, æt. 32, of nervo-bilious temperament. Has suffered much from mental distress, which has been accompanied with gradual deterioration of her bodily health. Pulse quick and weak—tongue rather dry—and menstruation irregular, often in excess. It has now continued ten days, and there is also diarrhœa, the bowels acting as soon as food is taken into the stomach. There is constant pain in the head and epigastrium—leucorrhœa—globus hystericus—and anorexia. She was ordered a little mercurial pill with extract of conium each night, and half a grain of oxide of silver twice a day. On the next day of seeing her there was slight general improvement. The diarrhœa and menorrhagia were restrained. She complained of a sensation of pain and weight in the stomach after taking the pills. Symptoms of febrile catarrh subsequently occurred, and she complained of the pills occasioning pain and making her sick—they were, therefore, after ten days, discontinued. In as much as the state of mind and a very sedentary occupation were apparently the permanent and essential causes of the woman's complaint, removing it out of the sphere of medicinal relief, the hope of material amelioration by any

remedy appeared precluded. She was a patient of Dr. Golding Bird, at the Finsbury Dispensary.

Case 12.—M. P. æt. 50. had suffered ever since the cessation of the menses, at the age of 45, with gastric and uterine irritation, indicated by frequent vomiting, loathing of food—flatulency—sour eructations—constipation—pain in the back—sense of bearing down—and leucorrhœa. She was in a state of excessive debility. Had been under the care of Sir James Clarke, and others, without deriving any benefit. In the course of a fortnight, with the use of mild aperients and half-grain doses of oxide of silver twice and three times a day, she was greatly relieved, and from that time rapidly progressed to recovery. She was under the care of my friend Mr. C. J. Phillbrick, of Colchester.

Case 13.—Sarah K. æt. 54, was complaining of a dull aching pain occurring in the epigastrium, chiefly after eating, together with a sense of fulness. Pulse quick and rather sharp. Appetite bad—bowels regular. The tongue anteriorly presents a strawberry and cream appearance, posteriorly there is thick white fur ceasing abruptly. She was ordered an aperient and half-grain doses of oxide of silver twice a day. The pills at first made her feel sick, and occasioned a sense of gastric constriction; but this soon went off, and she felt altogether better. The amelioration continued for a time, when constant sickness supervened. The remedy was then discontinued, and I am inclined to consider the case as one where disorganizing action was going on in the stomach.

Case 14.—J. D. was first seen by me September 3d, 1839. He had been suffering with gastralgia during five months, and had derived but slight benefit from stimulants, opiates, or counter-irritation. He complained of constant pain in the scrobiculus cordis, violently exacerbated once or twice daily, the paroxysm sometimes lasting two hours, and of such intensity as to compel him to lay down wherever he might be. No sickness, pulse natural, bowels regular. A sensation of emptiness was experienced before eating, and soreness and fulness afterwards. He was ordered half a grain of the oxide of silver three times a day. On the 5th he expressed himself much relieved: there was less tenderness, and he felt as if something was removed from the stomach: the unpleasant sensation before and after eating was also much diminished. He went on favorably till the 19th, when the symptoms recurred, but were again subdued by the administration of the remedy in doses of a grain and a half three times a day. The man was a patient of Dr. Ryan.

Case 15.—Mrs. M. æt. 37, was affected with complicated and anomalous abdominal disease, of which, suffice to say, diarrhœa and pyrosis constituted distressing symptoms, which were relieved in forty-eight hours by the use of oxide of silver. The pyrosis had existed previously for three months. She was seen twice by Dr. Todd.

Case 16.—Mr. L. æt. 44. had been for some years on and off affected with pyrosis, gnawing pain in the stomach, and various other dyspeptic symptoms, which all ordinary means failed in alleviating. Mr. Dennett, of Storrington, Sussex, whose patient he was, reported him completely relieved with the oxide of silver.

Case 17.—T. D. had suffered at times for the last five years with severe gastralgia, generally occurring towards Autumn. There was constant aching and tenderness in the region of the stomach. He also complained of nausea, and at times a quantity of clear water was thrown up. Anodynes, bleeding, calomel and opium, stomachics, bismuth, and counter-irritation were in turn

resorted to without benefit. After three months, oxide of silver was prescribed, and from it complete relief was speedily obtained. Dr. Todd saw this patient two or three times.

Case 18.—Jane W. *æt.* 25, had been affected with occasional pain of a gnawing character in the left hypochondrium for the last three years: it sometimes came on very violently, but without reference to the stomach being full or empty, and has been much worse for the last *few* weeks. Bowels regular, and general health pretty good, but "the pain wears her out." At the expiry of three weeks complete relief was afforded by administering the oxide of silver in half-grain doses twice daily, and she had become much stronger and more cheerful. She was a patient of Dr. Golding Bird, at the Finsbury Dispensary.

Cases 19, 20, and 21.—Oxide of silver was administered to three women suffering with leucorrhœa, during periods varying from a week to a fortnight, but no essential benefit accrued. The discharge was merely vaginal.

Case 22.—Jane C. *æt.* 25, unmarried, of a sallow and aged appearance, complained of great general languor and debility, with loss of appetite. She had been affected eleven years, ever since the commencement of menstruation, with uterine irritation, and apparently in connexion therewith by fits of an epileptic character, but she does not usually scream. They generally come on in the night time, and have latterly been much more frequent, occurring once a fortnight, immediately after the menstrual period and between whiles: they were preceded by swelling of the genitals. Under the use of the pills she improved greatly in the first instance, one menstrual period passing without fits. The improvement continued for a fortnight, but the temporary lull was only fallacious, the fits coming on as badly as ever. She was a patient of Dr. Golding Bird, who deemed the case one of epileptic hysteria.

Case 23.—Esther J. *æt.* 16, evidently of precocious bodily development. She had the appearance of a woman of 25, and had evidently outgrown her strength, so that it was a question whether spinal irritation might not exist. The menses had appeared two years previously, but since been somewhat irregular. Countenance pallid—bowels torpid—occasional sickness—pain in the left hypochondrium—pulse 80. She was ordered aperients and half a grain of oxide of silver twice a day. Instead, however, of getting better, she got worse—the pain and sickness increasing, and the pulse being accelerated. The remedy was therefore discontinued.

Case 24.—Sarah B. *æt.* 17, complained of severe pain in the left side, her health being otherwise excellent. The menstrual function had been decayed, but was re-established by the use of electricity. She was ordered half-grain doses of oxide of silver, which at first made her feel somewhat sick, but by persisting in its use for near a fortnight the complaint was effectually relieved. She was a patient of Dr. Golding Bird, as were also the next four persons to whose cases I am about to refer.

Case 25.—Mary H. *æt.* 31, suffered severely with pain in the left side, and was also somewhat hysterical and weakly. A fortnight's administration of the oxide of silver completely removed the pain, and effected much improvement in her general health.

Case 26.—Marianne P. *æt.* 21, had suffered severely for some months with pain in the left side, which was constant, but becoming much worse at

times. Was troubled with cough and sickness, though otherwise in good health. A fortnight's course of oxide of silver completely relieved the lateral pain.

Case 27.—George V. æt. 45, of bilious temperament and sedentary occupation, was suffering with severe burning pain under the right scapula, occasional sickness, severe cough, loss of appetite, diarrhoea, (the bowels acting eight or ten times a day,) and sense of fulness about the abdomen: there was much cardiac and vascular excitement, and he suffered from general debility. Half a grain of oxide of silver was ordered twice a day. The diarrhoea was soon restrained (the bowels, indeed, becoming somewhat constipated), the stomach was more settled and the scapular pain abated. He continued the pills with the addition of a small quantity of decoction of aloes and compound camphor tincture, so as to allay the cough and regulate the bowels. Under the above treatment the case progressed most favorably, and at the expiry of three weeks, he was perfectly relieved in every respect, excepting his cough, feeling stronger and more comfortable than he had done for a long time.

Case 28.—Sarah S. æt. 33, had suffered with hæmorrhage from the bowels, ever since her confinement nine weeks previously, by which she had become much reduced. She had been under treatment with lead, and for some time without any permanent effect, constantly losing much blood of a venous character, especially when the bowels acted, which they did regularly twice a day. No piles could be detected. The skin was dry—the pulse weak—the face œdematous, and the lacteal secretion nearly suppressed. She took the oxide of silver first in half-grain, and subsequently in grain doses, every six hours, and within sixty hours the hæmorrhage was effectually arrested: the medicine was continued for about a fortnight at longer intervals, and a rapid re-establishment of her health was effected.

Case 29.—Mrs. F. had been affected for ten days with profuse menorrhagia, the blood being partly discharged in clots, and, according to her account, in very great quantity. The bowels were open—the pulse was weak and quick. Dilute sulphuric acid, opium, and acetate of lead, in turn, failed to restrain the flux. The last remedy appeared to take some effect, but was compelled to be laid on one side, from disagreeing violently with the stomach. A strong infusion of secale cornutum was then administered, but caused violent vomiting without having any apparent effect on the hæmorrhage. Half-grain doses of the oxide of silver were then combined with the infusion of the ergot, when the vomiting no longer took place, and the menorrhagia was arrested within eight and forty hours.

Case 30.—G. D. æt. 27, had suffered with epilepsy from his boyhood, for which he had submitted to much medical treatment. In August last he had been taking nitrate of silver for nearly two months, under Dr. Burne's directions, without benefit. For two months I then administered the oxide at the rate of from a grain and a half to five grains per diem. It was then laid aside for a fortnight, in consequence of a deranged state of bowels. He then resumed it for a period of six weeks, when he desisted in consequence of *apparent salivation*, which was supposed at the time to depend on alveolar abscess, situated at the root of one of the molar teeth. He resumed the medicine after a short time at the rate of four grains per diem, but in the course of ten days was again salivated, evidently from its use, and while in this state he was seen by Dr. James Johnson. The further use of the remedy was therefore precluded, but an instance was constituted of the constitution being powerfully under the medicinal

influence of the oxide of silver from a lengthened administration without cutaneous discoloration resulting. The fits became on the average much less frequent and severe at the time, and he enjoyed a much better state of general health, being stronger and less nervous than previously. The man has, I regret to say, since relapsed, and his fits are as bad as ever. In another epileptic case oxide of silver was administered under the direction of Dr. James Johnson, for the space of two months, without any inconvenience resulting, but, not appearing to exert a beneficial influence over the disease, it was laid aside.

In relation to the above cases the following brief considerations may be advanced. The oxide of silver is entirely devoid of causticity, its local application occasioning no pain, a valuable fact in reference to its internal administration. The remedy appears beneficial in various nervous affections, when they have become idiopathic, that is to say, when the cause, whether originally seated in the stomach, uterus, spinal cord, or other viscus, is removed, and the impression alone remains behind. There are no cases in which the oxide of silver is so rapidly beneficial as in cases of idiopathic gastric irritation, whether evinced in pyrosis, gastrodynia, or want of relation between the stimulus of food and the action of the stomach; but if organic change have taken place in the organ, the same benefit is not to be anticipated. In obstinate diarrhoea and hæmorrhages I am greatly in hopes that the silver will be found analogous in its action to lead—as efficacious, but milder and more manageable in its effect; this however requires much further trial. It would be unfair that the merits of the oxide of silver should be at all suffered to rest on its efficacy in epilepsy, of which we are well assured that the great majority of cases depend on organic change, which the medicine cannot influence. In reference to its utility in epileptic cases, all that can be said is, that if, as I consider, the oxide of silver will not produce a discolouring effect on the skin, the utmost advantage that can be expected from the dangerous administration of the nitrate may be safely and fearlessly attained by the substitution of the oxide.

I shall conclude by adducing the evidence on the subject which has been kindly afforded me in written communications.

Dr. Clendinning informs me that—

“The oxide of silver has, so far as tried at the Marylebone Infirmary, appeared to exert an influence in epileptic and gastralgic affections similar to that long attributed to the nitrate of silver. The particulars of two or three cases in which the medicine appeared to act decidedly beneficially, have been communicated to Dr. C. by the resident officers, and other cases have been mentioned to him by the same gentlemen in which more or less relief seemed to attend the use of the remedy.”

Dr. Ryan writes thus—

“I have tried the oxide of silver in very bad cases of epilepsy, I think with some benefit.” “From these I am disposed to think that it may prove a valuable remedy, but my experience is at present too limited to justify a positive conclusion. It had a very decided effect in intense gastralgia.”

Dr. Golding Bird makes the following observations.—

“From the experience I have had in the administration of the oxide of silver, I have formed a high opinion of its value as a therapeutic agent; not from its possessing any marvellous specific power, but from its tonic, and to a certain extent, sedative properties—rendering it as far as I have seen an useful remedy in several forms of neuralgia, and especially in certain cases of dyspepsia attended with irritable stomach and pain in that viscus after taking food, when the secretions of the liver and intestines have been corrected as much as possible by the careful administration of alteratives. The oxide of silver appears to me to possess the good qualities of the nitrate without its inconveniences, and to exert a more directly sedative action than that salt; in which property indeed it approaches the acetate of lead, at least if the effects of its administration in menorrhagia can be admitted as sufficient grounds to justify this conclusion.”

THE Medico-Chirurgical Review,

N^o. LXVI.

[No. 26 of a Decennial Series.]

JULY 1, to OCTOBER 1, 1840.

STATISTICAL REPORTS OF THE HEALTH OF THE NAVY, FOR THE YEARS 1830, 1831, 1832, 1833, 1834, 1835, and 1836, IN THE SOUTH AMERICAN, WEST INDIAN, NORTH AMERICAN, MEDITERRANEAN AND PENINSULA COMMANDS. Ordered by the House of Commons to be Printed. 1840.

THE Returns from the Army, published by Major Tulloch, are now followed by similar Returns from the Navy. We were confident that the able physician at the head of the Medical Department of the latter Service would take care to render the Reports transmitted to the Admiralty as available as possible to the interests of medicine and the public, and we have not been disappointed. There is no man who would do more in the exercise of his official authority for the promotion of science than Sir William Burnett.

The returns before us are drawn up by Dr. Wilson, who informs us of the circumstances under which it was commenced and has been carried on. It appears the inquiry was begun towards the close of the year 1836, by order of the Lords Commissioners of the Admiralty, and had been in progress some months, when, on the sudden death of the officer first appointed to the duty, Dr. Wilson was called on unexpectedly to perform it. When he had fairly entered on it, and considered the ends in view, with the best method of obtaining them, it appeared to him that the plan adopted by his predecessor was in some points defective and ill-devised, and that to pursue it, without addition, or correction, would, in a great measure, defeat the object of the undertaking; because it must lead to unsatisfactory, or worse, to erroneous conclusions. It was defective, inasmuch as it was not proposed to trace disease from ships rigidly to, and through hospitals, thereby omitting much of the mortality and invaliding; and the method of computing the mean force of squadrons was erroneous, raising it, and in some instances by a large amount, above the number employed. The effect of omission in the one case, and addition in the other, would have been to give an exaggerated view of the health of the navy, and to represent it as being more exalted than it appears to be by the following Reports, and than it really is. In these circumstances, it was necessary to begin the work anew, and all the previous labour, however unwillingly the sacrifice was made, was lost. This statement is given, not with a view of disparaging

No. LXVI.

X

another, who is gone, but to account, in some measure, for the time which has elapsed between the ordering, and presenting the Reports.

This much seems due to Dr. Wilson. He explains, in an *INTRODUCTION*, the mode in which the Reports are collected, and, consequently, the degree of credit that attaches to them.

It appears that, medical officers, whether surgeons, or assistant-surgeons, while in charge of the health of ships' companies, are required, by Admiralty instructions, to transmit to the Physician-general of the Navy the following documents, relating directly to such diseases and injuries, and their results, as may occur in the ships to which they respectively belong, viz. a *Daily Sick Book*, *Monthly* or *Three Monthly Nosological Returns*, and a *Journal of Medical and Surgical Practice*.

The first exhibits, in separate columns, the date of entry on the surgeon's list, the patient's name, age, quality, nature of disease or hurt, date of discharge from the list, and the issue of complaint whether in cure, removal to hospital, invaliding, or death; it is transmitted annually.

The second gives a comprehensive view of the first. In it names of patients are omitted, but all cases of disease, and injury, are contained and arranged in a tabular nosological form. This return is transmitted at the end of every month from ships on the home stations, and at the end of every three months from ships on foreign stations, except in cases of prevalent, or of unusually fatal disease, when more frequent communication is ordered. It exhibits in classes and orders, the number of cases added to the list, the number discharged to duty, the number sent to hospital, the number dead, the number invalided, the number on the list at the time it is sent, the number confined to bed, the number convalescent, the number of objects for survey, and the number remaining from the previous return. The Cullenian method of arrangement is that adopted in the navy. In each Nosological Return it is required that remarks be appended to the figures on health and sickness, and whenever it can be done, on the appreciable causes.

The third return contains a detailed account of the symptoms of disease, and injury, and of the treatment instituted for their cure. It is, in fact, a journal of the medical transactions of the ship, showing the nature, progress, and management of all important complaints, till the subjects of them shall be cured, removed to hospital, invalided, or die. Attached to it is a tabular abstract of all the cases therein treated, with their terminations; it is concluded by general remarks on the matter it contains, and is transmitted annually. And it is especially desired, when very prevalent or fatal forms of disease happen in ships, that they should be traced to their sources, and accounted for, if possible. It is also directed that states of weather, degrees of temperature, the general interior economy of the ships, and whatever else may appear to conduce to health, or to induce disease, be specified.

The tables have been deduced from these documents, together with returns from hospitals, and sick quarters.

At present there are only five naval hospitals, viz. at Portsmouth, Plymouth, Malta, Jamaica, and Bermuda, and two marine hospitals, those of Chatham and Woolwich, for the reception of seamen; but sick seamen and marines are received into all military and colonial hospitals, in such places as do not contain naval hospitals. Besides those institutions, sick quarters are established at fifty stations for the accommodation of sick and hurt sea-

men and marines, where surgeons are appointed to attend such as may require the quietness and comforts of shore, procuring them suitable lodgings, diet, medicines, &c; hence the appellation "sick quarters." All these fifty sick quarters are in the United Kingdom, and have reference to the tables of the Home Stations only. During part of the time embraced by this Report there was an additional naval hospital at the Cape of Good Hope.

In peace, no physicians of the fleet, or other superintending medical officers are employed afloat; and consequently no synthetical, comprehensive accounts of disease, and the results of disease, can be sent to the physician-general from the various naval commands. The consequence is that the reports are multitudinous, minute, not unfrequently broken, and collated and summed up with no little labour, and indeed difficulty. Absolute accuracy, under such circumstances, can hardly be expected, but the deviations from it have not been material. But although there can be no material incorrectness respecting the ratio of mortality, errors are admitted by Dr. Wilson to be likely in the case of invaliding. He believes he may have rated it too high. Dr. Wilson enters at some length into the circumstances that interfere with the results of calculations. These are neither few in number, nor inconsiderable, but we must refer those who would wish to be acquainted with them to the Report.

A table is furnished containing the *allowance of provisions* in the fleet. It is rather long, and we think that some of the general observations which follow will sufficiently indicate the more important points.

Diminution of the Supply of Spirits.—Previously to 1825 half-a-pint of spirits, when spirits were issued, was allowed to every person serving in the fleet; at which time a salutary and judicious change was introduced, by the reduction of the spirits to a quarter of a pint daily, and the allowance of tea, or coffee instead. The practice formerly was, to divide the half-pint of spirits into two equal parts, one of which was issued at dinner-time, the other in the afternoon; now, instead of the afternoon allowance of spirits, tea or coffee is issued, and proves a safe, healthy, and satisfactory article of diet. When the change was introduced, it was apprehended by some that the seamen, if they did not resist, would be greatly dissatisfied with it, their love of grog being considered paramount to all considerations. It was, however, introduced without disturbance, or general complaint; in a short time it became liked; and, now, it is believed, that the majority of the men serving, if it were put to them, would prefer the present to the former system. It is certain that the change has acted, and will act yet more beneficially; for it is unnecessary to state, that one of the most active causes of disease and insubordination, with all its mischievous results, has been the intemperate use of spirituous liquors. Well may Dr. Wilson add, that we cannot doubt that increased temperance, aided by other means of improvement, will eventually give the navy a force, organic, moral and intellectual, much greater than any it has hitherto possessed.

The naval rations are abundant in quantity and excellent in quality. It cannot be questioned that these circumstances contribute largely to the high degree of health now enjoyed in the Royal Navy. Formerly a ship of war was, on many accounts, an object of aversion; destructive disease, under various forms, being one. Scurvy, putrid ulcer, malignant dysentery, and

fever, allied to that of gaols, suddenly swept off the greater portions of many ships' crews, and well nigh depopulated fleets. Many causes, no doubt, concurred to occasion those maladies; but in the production of the first and worst, the most fertile and constant, was insufficient nutrition, resulting from scanty, and unwholesome food. It is matter of surprise, not less than of regret now, that the pervading agency which led to such disastrous results on health in those days, should not have been known, or, if suspected, was not counteracted. Till the year 1796, scurvy continued to infest the fleet, to cripple its power by the number it affected, and, in many instances, to produce a large amount of mortality.

In 1797 the victualling was changed, greatly improved, and strictly regulated, and consequent immediately to the change, the health of seamen improved strikingly. Scurvy, typhoid fever, dysentery, and ulcer, which, up to the period of change, had produced great havoc, became comparatively rare in occurrence, and light in impression. Some ships, in particular circumstances, suffered from one or more of those diseases; but the sweeping epidemics of former years, which often rendered individual ships, and sometimes entire fleets, totally ineffective, became unknown. Since 1797 various improvements have been introduced into the victualling of the navy, such as giving cocoa in lieu of gruel (burgoo) for breakfast, issuing salt meat at a much earlier period, after being cured, the supply of better articles, and the substitution of tea for the afternoon allowance of spirits; and with every improvement in those respects, as a general result, has there been further improvement in health, till the *four forms* of disease, at no distant date so destructive, are scarcely known, except by name. Endemic fever, the effect of extraneous agency, in particular localities, sometimes prevails extensively and fatally; acute inflammatory dysentery is not uncommon, nor frequently without serious results; and ulcerative disease is any thing but rare, and is often extremely troublesome.

Previously to the year 1797, the nutriment supplied by public rations to seamen and marines, was at least a third less than it is now. What effect this must have had may be guessed with ease.

"Palatable water, in sufficient quantity, is essential to comfort, and influential on health; and in no article, at least in the manner of keeping, and preserving it, has there been greater improvement than in this indispensable one, in recent times, in ships of war. When water was kept in casks, it became slightly fetid, from the disengagement of hydrogen, in a few days, and, in a fortnight or three weeks, so loathsome, as to be swallowed with repugnance, even when called for by urgent thirst. The progress of decomposition, and its nauseating results, were especially rapid and offensive, when the water was most pure, at least, when it contained the smallest portion of mineral admixture, and the temperature was high. When the solid food at sea consisted almost exclusively of very salt beef and pork, biscuits long baked, and puddings made of salt suet and flour, the desire for, even the necessity of abundance of water, was great. No one who has not felt it can imagine the distress that was often endured, within the tropics, setting aside the effects on health, from the intense thirst thus excited, and the only means available for quenching it. Water so putrid, and offensive, often so thick, and green from vegetable admixture, and decomposition, and emitting so strongly the fætor of rotten eggs, as to disgust at once the sense of smell, and of taste.

Happily all those evils and inconveniences are banished from the Navy, by the

substitution of iron tanks for water-casks. Water suffers no change in these iron vessels, however long kept, at least no change in itself, from decomposition. The metal becomes oxydised to a certain extent, and the oxyde in the interior of the tank mixes with the water, but, from its weight and insolubility, falls to the bottom, and does not, except in stormy weather, discolour the water, till the tank is nearly empty. When the water is taken from the tank in stormy weather, or from the bottom, it has a brownish colour, on account of a portion of the oxyde of iron being suspended in it, the greater part of which soon falls to the bottom of the vessel into which it has been drawn. It is not tainted with any thing offensive either to the palate, or the nose. There is no reason to suppose that the slight chalybeate admixture is injurious to health; it may be in such minute portions beneficial." xiv.

Dr. Wilson properly recommends great care in procuring water originally good. To save a little expense bad water has been taken—an injudicious as well as cruel parsimony.

The diet of the sick seamen in the naval hospitals is unexceptionable. Dr. Wilson gives a table which exhibits it; and he adds—In ships the diet of the sick is as nearly the same as the circumstances in which they happen to be placed will permit. When long at sea, fresh meat in any quantity, except poultry, cannot be procured; but preserved meats, and soups, good substitutes for fresh beef, and vegetables, are supplied, and are made available, with many other comforts, for the support of the sick and convalescent.

It is due to the present Board of Admiralty, and the Physician-general, by whom it was proposed and recommended, to state, that the diet of the sick at sea has been much improved within the last five years. Previously, though preserved meats, tea, sugar, sago, rice and barley, were supplied, there was no money fund by which soft bread, potherbs, poultry, spices, milk, porter, &c. could be procured; and consequently in many cases of sickness, and more of convalescence, many things were wanting, and the privation was severely felt by the medical officers, as well as the patients, of essential importance to the speedy restoration of health, if not to the absolute preservation of life.

From diet, the Reporter passes to the *general economy* of ships of war, under the heads of modes of employment, of berthing, of cleaning, and of ventilating. It is both interesting and necessary to become acquainted in some degree with life on board ship, in order to appreciate the causes of the health or of the diseases of sailors.

1. *Employment*.—Seamen, we quote the Reporter, and embarked marines, excepting those employed as sentries, are divided into two watches, on which alternately the working of the ship devolves. Such is the practice now, though at one time it was not uncommon to divide the working force of ships of war into three watches. Each method has certain advantages, and drawbacks. Three watches give the men longer intervals of rest, which, during the night at least, is desirable, but necessarily reduce the strength of the party in charge to an extent, which might be, especially with reduced complements, dangerous, and must be fatiguing. When, as is common, if not universal now, the men are divided into two watches, they perform alternately, during four hours each, the sailing operations of the ships. Each party has four hours' duty, and four hours' rest, or, as is said, is four hours on deck, and four hours below, excepting the four hours between four and

eight o'clock at night, which are divided into two half, or, as they are called by sailors, dog-watches. The effect of this break is to alter constantly the periods of labour and rest to each party; so that the men who have the first watch one night, have the second watch the next night, and so on till the circuit be completed.

In this way, though there is sufficient time for rest, it is never long continued, and sleep is broken into short periods. Whatever effect such a division of labour and rest may have on constitutional vigour, though it is perhaps the best that can be devised, it probably contributes much to the frequency of some affections, such as catarrh, and rheumatism, to which seamen are so subject. At midnight, or four o'clock in the morning, the men relieving the deck rush from their beds into the open air, often very inadequately covered, perhaps perspiring profusely, and pass in an instant from a highly heated, and debilitating, to, it may be, a really cold, always to a comparatively cold atmosphere. In such circumstances it is to be expected that catarrhal, rheumatic, and other affections, traced to sudden, reductive changes of temperature, should be numerous. These remarks apply chiefly to ships at sea. In port the number of men kept on deck lessens with the increasing safety of the anchorage, till, in ships moored in secure harbours, all hands, excepting the officer, petty officers, and sentinels in charge, may pass the whole night in bed.

2. *Berthing*.—Seamen and marines are berthed, that is, mess and sleep, on what is called the lower deck of all ships under first rates, in which they occupy the middle, as well as the lower deck. By lower deck, in frigates, and all smaller vessels, is meant the lowest, or that covering the holds, and store-rooms; but in ships of the line it means the lower gun-deck, and has the orlop deck between it and the holds. There is, therefore, material difference between the parts of the vessel in which the people live in ships of the line, and in frigates, and smaller craft. In the former there are ports which can be kept open in moderate weather; in the latter there are only small apertures—scuttles—close to the water, which cannot be kept open except in an absolute calm at sea, and very fine weather even in harbour. Hence, as well as from the intervention of a deck between the crew and the holds, ships of the line have more means of ventilation, and are generally better ventilated than frigates, and smaller vessels.

In all ships, from the number embarked, and the space available for what may be called domestic purposes, viz. for eating, and sleeping, the men are, from necessity, much crowded between decks, the least relatively in three deckers, for in them the crews have two decks to live on, and the numbers are not augmented in the ratio of the space. Yet it is not clear that the benefit thus obtained, by the reduction of pressure, is not counterbalanced by the increased volume of heated and vitiated air in which the men live. So far as it can be accomplished, even at the expense of increased crowding, it appears to be better to berth crews, at night, in one tier, than in two tiers; for at sea, and even in harbour, except in very moderate weather, the ports must then be closed, and fresh air can be conveyed only by the hatches, to the sleeping places; when they are double, adequate ventilation, supply of pure and evolution of impure air, with resulting reduction of temperature, is much more difficult than when they are single. The difficulty does not de-

pend on the increased volume of heated and deteriorated air thus produced, but also and principally on its being intersected by a deck; for the pure air conducted down the hatches can be directed to one division only, leaving the other in a state of increasing impurity, the means of admitting air to it being extremely imperfect, during four, six, or seven hours at a time.

The usual space between the suspending points (clues) of the hammocks, is from 14 to 18 inches; so that when they are extended by the beds, their bodies are in contact. The effect is to bring the bodies of the men into contact, in greater or less number, according to the size of the ships. When at sea, with a watch on deck, the accumulation and pressure are reduced by a half, but when in secure harbours, 500 men, perhaps, sleep on one deck, their bodies touching each other, over the whole space laterally, and with very little spare room lengthways.

The *comfort* of this within the tropics is conceivable. Yet the prejudicial effect on health has proved scarcely appreciable, and, as Dr. Wilson observes, the actual salubrity of ships shews that air may be contaminated to a certain extent, for a considerable period, without producing any decidedly deleterious effect, immediate or remote, on the persons breathing it. The fact we presume to be, that the foul air breathed for a short time is more than compensated by the fresh air inhaled for the greater portion of the twenty-four hours. How different with regard to *air*, after all, is the sailor, crowded though his berth may be, and the pale inhabitant of a London alley.

3. *Cleaning*.—This is carried ad extremum in the navy. The ordinary methods employed are washing, wet, and dry stoning. In the first, large quantities of sea-water, with friction by brushes, is used; in the second, a small quantity of water is poured on the decks, which are then diligently rubbed with smooth, flat stones, generally of sand-stone, designated holy-stones by the seamen, for the purpose of removing stain-spots, grease, &c. In the third, the same kind of stones are used for rubbing, but, instead of water, they are applied directly over a small portion of sand, cold or heated, which has been scattered on the decks. There is a fourth method sometimes employed, called sprinkling and scrubbing, in which the decks are slightly wetted, and rubbed with brushes, or dried by cloths, so far as they can be dried by such means. The selection from, or alternation, in various proportions of these methods, is left to the determination of officers in command.

“ In each of them,” Dr. Wilson continues, “ except that of dry stoning, more or less water is employed, a portion of which, whatever pains be taken to remove it, is absorbed by the planks, or lodges in their crevices, to be dissipated in the course of considerable time by evaporation. In ships where daily washing, or wet cleaning is practised, the decks are never thoroughly dry; the evaporating process which carries off the retained moisture of one morning, is not completed till the washing operations of another morning are begun. Frequent washing of the upper, and upper gun deck, in ships of the line, is perhaps unobjectionable, but as applied to the lower and orlop deck, and the decks of other vessels where the people eat and sleep, its use should be restricted to the demands of necessity. Evaporation, especially in low decks, and low degrees of temperature, goes on slowly, and therefore long; in hot climates it is of course more rapid, and sooner completed; but in either case there is strong reason to

conclude, as well from observation, as the nature of the things, that the effects on health are injurious, sometimes highly so."

Catarrhal and rheumatic affections would, of course, be likely to occur, and Dr. Wilson thinks there cannot be much question of their power of exciting many of the inflammatory affections of the lower extremities which give rise, in some ships, to much mischief.

Cleaning decks by dry stoning is free from these objections, and is therefore, in these important respects, preferable. Its power to remove impurities, especially those which discolour the planks, and are so far offensive to the eye, is not so complete. Besides, when very friable (sometimes calcareous) stones are employed, a good deal of dust is disengaged in the process, which irritates the eyes, settles on the clothes, and insinuates itself into the chests, bags, &c., and is therefore to a certain extent annoying. But, as the Reporter observes, these are small evils, and should not be weighed against the more serious ones of frequent washing. Spotless whiteness of the decks is not necessary, and may be bought too dear.

The holds, wells, and spaces under the limber boards, in which accumulations of extraneous decomposable matters are more likely to happen than on the open decks, should be closely looked to; and they generally are. Personal cleanliness is strictly enforced, and, indeed, for criticism or for alteration in any respect. But high as is the present standard of health, Dr. Wilson anticipates its being raised even higher, and would stimulate all concerned to exert themselves to the uttermost.

Employment.—We need not dilate on the beneficial influence on health of a cheerful condition of mind. Until lately this was sought in physical rather than in intellectual enjoyment; and the dance, and song, and athletic sport were all that was thought necessary for Jack. But the intelligence of the age has penetrated the strong sides of the line-of-battle ship, and the sailor must be looked upon, and is, as a moral engine and a moral agent, as well as a mere machine. We most cordially concur in the following remarks of the Reporter.

" Little was attempted till within the last 20 years, except the appointment of chaplains, and schoolmasters to certain ships; and, setting aside the performance of divine service on Sunday by the former, the value of which is not questioned, it is no breach of truth or charity, to say that little was done by either for the working sailor, or marine. Little pains were taken, at least systematically, to train and instruct the mind. Discipline, in the military sense of the word, having in view the encouragement of good, as well as the punishment of bad conduct, was enforced; but it must be admitted that the latter mode generally predominated much over the former, necessarily, and from no proneness to severity in commanding officers. Had safe, and therefore salutary information been generally communicated in all fitting opportunities, it is not too much to affirm that the order of things would have been reversed—that punishment would have been little, and reward much. The bearing of these observations on the subject in hand, the health of seamen, is evident.

The most simple and comprehensive method for accomplishing that end, would have been the supply of amusing, and instructive books. Sailors can generally read, and many of them are fond of reading, as every one who has been much at sea, and observed the eagerness with which they fasten on any books which fall in their way, and read, either alone, or to a group of attentive listeners,

knows. Yet, till a comparatively recent date, no measures were adopted, at least at the public expense, to gratify, and foster a taste, from which many advantages, direct and indirect, might have been derived, and may, and no doubt will, be derived. Less than 20 years ago, Bibles and Prayer-books, and, more lately, religious tracts, were issued gratuitously. The excellence of the measure, and of the motive which led to its introduction, are fully admitted; but it is no disparagement of either to say, that more was wanted. Knowledge must precede conviction; and, in the ordinary course of things, the mind must be opened and enlightened by ordinary means, before it can be made capable of understanding the doctrines, and receiving the benefits of religious truths.

Entertaining these opinions, which few, it is believed, will controvert, it is gratifying to know that means have been adopted to supply so great a want, and to obtain ends of such importance—agreeable occupation of the mind, and improvement of its faculties, leading to increase of health, and greater efficiency of national force. By an Admiralty order, dated August 1836, libraries are directed to be established in each of Her Majesty's ships, for the use of the crew, furnished at the public expense, and placed in charge of the schoolmaster. The books, amounting to 270 volumes for large, and 100 for smaller ships, exclusive of Bibles, are judiciously chosen, with the view of combining amusement, and instruction, and making the first subsidiary to the last. Besides the accomplished men now appointed to instruct the junior officers, it is further directed, by an order from the Admiralty, May 1837, that a fit person shall be appointed to give elementary education, comprehending reading, writing and arithmetic, to the sailor boys, and other seamen, and marines, who may require it.

There can be no doubt of the value of these measures, or of the beneficial results to which they will lead, if that on health alone is considered. Many less deserving have attracted much notice, and obtained high praise. Nowhere is there a mental field more capable, or more worthy of cultivation, than that which may be found on board ships; and it may be fairly lamented that it has been so long, so much neglected. Leisure, long absence from loved objects, and scarcity of external objects of interest at sea, dispose the mind to contemplation, rendering it highly susceptible of moral, and intellectual impressions, and, where it has the means, of being pleased and benefited by them. The time has passed when utter ignorance of every thing, but his immediate duty, with all the debasing, and destructive effects of savage ignorance, is thought essential to the character of a British seaman—implicit obedience, indomitable courage, and love of country. The time, too, has passed, when such ignorance, even if it were desirable, could be retained. Information of some kind will be communicated; it is therefore politic, if there were no higher object, that it should be of a sort to improve, not to deteriorate.

And it may be anticipated, when these, and other advantages, which are to be found in the Royal Navy, some of which have been alluded to above, are fully understood, that the service will become more popular than it has heretofore been. It is difficult to get rid of a bad character. Tradition, especially in seaport towns, and in merchant ships, is still rife of the evils, and of the sufferings, formerly endured in ships of war, some of them false, or exaggerated, but too many of them true. When there is neither personal evidence, nor convincing testimony, to the contrary, the easily prejudiced are too apt to believe that such evils, and sufferings are not yet banished from the public service; and it is therefore important to show, in how many respects, and to what extent, it has been really changed—how great is the preponderance of its benefits over its drawbacks. The best argument will be derived from experience. Good men, capable of thinking, and appreciating its advantages, and the number of such will increase, after knowing, and feeling them for some time, will not readily abandon them. They will speak of them to others, not yet sufficiently informed, or labouring under old prejudices; and thus the service will be sought, not

avoided, and a ship of war, happy, healthy, abounding in present comfort, and prospective benefits, will be an object of desire to good seamen." xx.

All who have at heart not only the well-being of the Navy, but of their country, will respond to these sentiments, and applaud their spirit, and encourage their practical application. Whatever some may affect to think, the existence of this country as a free, to say nothing of an independent state, is bound up in the thorough efficiency of her marine, and the time has passed when the press-gang and the "cat" can make it powerful. The service must be rendered one which men will enter voluntarily, one where merit shall obtain rewards, and the mind shall not be debased, nor the body tortured. And, in our own department, much as has been done, something perhaps yet remains to do, and the assistant-surgeoncy should be of such a sort as the best young men who quit our schools should not be unwilling to accept.

Ventilation.—That by wind-sails is the only one generally adopted. But it is defective in many points. With strong breezes, in dry weather, a sufficient volume of pure air can be carried by them to, but cannot be sufficiently diffused along, the decks. They can reach only one point of one deck at a time; at that point the force of the air, in fresh breezes, is too strong, chilling, and often communicating disease to the persons on whom it directly falls.* Beyond that point it extends various distances, according to the force of the descending current, but does not extend far in most cases, and is often scarcely felt over considerable spaces between decks. Three wind-sails are generally employed, which are suspended from the rigging, pass down the hatchways, and terminate at any point between decks, which may most require ventilation. They vary in size, from eighteen inches to three feet in diameter; and when properly adjusted, so that their open, upper part is exactly opposed to the breeze, they transmit a sufficient supply of air, if it could be equally diffused over the interior of ships. Distribution is the difficulty. In some places, as has been stated, where the tubes terminate, there is often too much; in others there is, if any, too little. That is the greatest objection to ventilating by wind-sails. In calms it is of course unavailable, and in rainy weather cannot be practised.

The removal of stagnant air, the only efficient ventilation, cannot be obtained by wind-sails. It has been attempted by an apparatus contrived by Captain Warrington. It has sufficient power to draw air from any part of a ship, more indeed than is required, but that can easily be reduced. When foul air is taken from below, fresh air will descend from above to supply its place; and thus, it may be supposed, that both purposes will be answered,

* "It sometimes happens that men near the wind-sails, feeling discomfort from the chilling effects of their currents, tie them up during the night, and so, while undetected, which may be during a whole watch, deprive their shipmates of the fresh air which the wind-sails might supply, and which is particularly wanted by those at some distance from the hatches. It also sometimes happens that wind-sails, which are taken up during rain, are forgotten to be let down again when it ceases. These, though not necessary, are objections to this method of ventilating."

and that nothing more can be desired for ventilating ships. But two objections present themselves to the completeness of the process thus conducted. Both the ascending and descending currents are strong, too strong, if the ascending one were not otherwise deleterious, to be safely applied to the body in their direct course; and beyond the limits of their direct course, through the hatches, as happens with wind-sails, their influence will be little felt; at least it will not be equally and beneficially felt. It is therefore still imperfect. The Reporter observes that Captain Warrington's apparatus, though exposed to some of the objections which have been stated to wind-sails, has a great advantage over them; it will not, like them, be rendered inoperative, or useless by calms or rains. It can be worked in almost every kind of weather; and it might probably be made to accomplish the desired object by some contrivance like the following. Pure air might be drawn by it from an open port, or hatchway, and transmitted through tubes led along the sides of ships, the tubes being so perforated as to allow numerous small streams to pass from them to the centre of the ship. In this, or some such way, it appears likely that all which is wanted and desired from ventilation, might be effected, deficiency, and excess being equally avoided.

In small vessels, where the cooking apparatus is on the same deck as that on which the people are berthed, the heat of the fire, especially in cold weather, contributes to its ventilation.

SOUTH AMERICAN STATION.

The first Report is on the squadron upon this station. The Report takes in each separate year from 1830 to 1836 inclusive. Each Annual Report is made up of four tables:—the first, shewing the total number of cases; the number of all diseases and injuries in classes; the number of cases sent to hospital, invalided and dead; with the ratio of each per 1,000 of mean strength. The second, shewing the total number of cases; the number of all diseases and injuries, in classes; the number invalided and dead: with the ratio of each per 1,000 of attacked. The third, shewing the number of principal diseases and injuries; the number sent to hospital, invalided and dead, with the ratio of each per 1,000 of mean strength. And the fourth, shewing the number of frequent, but not often fatal, diseases; the number sent to hospital, invalided and dead; with the ratio of each per 1,000 of mean strength.

We are informed by the Report, that the South American naval command embraces a great extent of coast and cruising ground. It extends, on the east side of the peninsula continent, from Para to Cape Horn, and on the west from Cape Horn to Panama, and thence to California. It reaches from the 30th degree of north, to the 58th degree of south latitude across the Pacific, from the equator to 58° south, across the South Atlantic; and from Cape St. Roque in the 35th, to California in the 120th, degree of west longitude. It is therefore exposed to almost all degrees of atmospheric temperature, from the highest to the lowest, with the ordinary meteoric agencies thence arising. Many of the ports and places of anchorage, and adjacent territories, differ from each other in almost every manner and degree. In

relative position, and nature and extent of exposure, in respect of contiguous land, its general form and distance, and influence on wind and rain, and in the soil, and products of the soil, there is great, sometimes extreme difference, in the various places resorted to by British ships. The places principally frequented are Rio de Janeiro, Buenos Ayres, Bahia, Pernambuco, and Para, Valparaiso, Callao, Coquimbo, Panama, and San Blas. In some of them art has been busy and effective; large towns have been built, and the ground has been cleared and cultivated in the neighbourhood of the towns, and on the margins of the bays and harbours; in others, beyond rearing houses and stores, things remain very nearly in their natural condition. Hence extensive marshes are in close contact with many of them; while in others, but more from natural formation than the labours of man, dry land, and little productive of vegetable matter, abounds. The places named are, with three exceptions, situate within the tropics, some near their external limits, some close to the equator, and others at different intermediate points; yet with all such difference in position, soil, products of soil, and climatorial heat, the inhabitants of the shores of this vast continent whether permanent or occasional, enjoy a high and a singularly uniform degree of health.

Epidemic diseases are scarcely known, they certainly are not destructive. The fever which frequently makes such havoc in the West Indies, never makes its appearance here. To such fevers as those which often are so fatal in Africa and Asia, in North America, and even in the Mediterranean, the people of this continent are not subject. They are not, more than the inhabitants of every other portion of the globe, free from febrile disease, but they suffer little from it. Even the malignant cholera has not yet, it is supposed, reached South America.

"Why is it," asks the Reporter, "that in a land-locked harbour, in this part of the world, under a powerful sun, surrounded by marshes and rank vegetation, ships lie for months, or years, without the occurrence of a single case of concentrated fever; while in other places, in Africa, in Asia, in North America, and more especially in the West Indian islands, things, to superficial observation, which appear to be the same, are productive of so much disease and death?"

The only thing in the shape of a reason which has been attempted is altogether incapable of satisfying an inquisitive mind. It has been alleged that exposure of the coast to the wide ocean, and the cooling influence of the trade winds, reduce the temperature so much, as to take away from other agents the power of exciting the more fatal forms of intertropical fever. To such unsatisfactory reasoning the thermometer offers instant and positive refutation. From Para to Rio de Janeiro the temperature through the year, and during corresponding periods, is higher than in that part of the Gulph of Mexico which stretches from Vera Cruz to Havanna. In the latter, fever is a frequent and fatal malady; in the former it is of rare occurrence, and has little force or fatality when it occurs. If high degrees of heat alone, or acting on swamps, and on abundance of vegetable and animal matter, could occasion such fever as that which proves highly destructive in the West Indies, it is clear that many parts of South America could not only not escape, but must suffer severely from it. Other causes, then, if we are to come to the truth, must be sought."

The Reporter recommends, and the idea is most judicious, a scientific survey of the soil, subsoil, and other permanent parts of the structure of the locality where it exists, in connexion with temperature, resulting atmosphere, and natural products.

We trust that the medical officers of both the navy and the army, and the civil practitioners abroad will devote their attention to this subject, and supply what is felt as a desideratum of the first importance. The Reporter anticipates, and we are inclined to go with him, more good from investigations of this sort, than from quarantine enactments or a sanitary cordon.

It is peculiar to this command, that, during peace, the ships are employed altogether on an alien coast. Along its whole extent, and nowhere within the limits of the command, excepting the recent small settlement at the Falkland Island, is there any British possession. Hence there are no hospitals for the reception of British sailors; the want of which, though it may not materially and directly affect life, increases the necessity for invaliding.

Year 1830.—The average numerical force during the year was 2,933. There were 28 ships and vessels of all descriptions, of which one was of the line, six were frigates, and the remainder sloops. The number of men appears small for the number of ships; but of the 28 employed, 12 were packets, and one was a vessel on passage to India. The packets have very small crews, and, being on the station during short periods, seldom send more than one quarterly report each from it. For each quarterly report, one-fourth of the complement of the vessel is allowed in calculating the mean force of the year; and hence the apparent want of proper proportion between the number of ships and of men employed.

The total number of sick and hurt was 3,611, being at the rate of 1231·2 per 1,000 of mean strength—a large proportion certainly, but not extraordinary and not excessive, when all the circumstances which swell the sick lists in the naval service are considered. Out of the whole number of sick and hurt, 27 died, or were killed by accidental violence, being at the rate of 9·5 mortality of mean strength, and 7·8 per 1,000 to the number of sick and hurt. There were 76 cases of invaliding, being at the rate of 25·9 per 1,000 of mean force. The number is considerable, absolutely and comparatively, but is much augmented, there is little doubt, as has been noticed above, by the absence of hospitals.

There were 236 cases of fever and febrile disorder, divided into 193 of continued, 31 of remittent and 12 of intermittent fever. Independent of detailed accounts, it may be inferred, that in most instances the diseases thus classed were slight and simple, since out of the whole number 227 were cured in ships; there were only six fatal terminations, and two, from resulting debility were invalided. The eight cases not terminating in complete recovery, were among the continued fevers. In no ship was there any prevalence, or any thing peculiar, either in the origin or nature of the febrile disorders.

The order "inflammation with fever," or that of primary organic inflammation, was, as usual, numerous, amounting to 1,035 cases, four of which terminated fatally, and nine were invalided. Half, however, of the whole

number were cases of slight cutaneous inflammation of the lower extremities, frequently terminating in some form of suppuration.

There were 169 cases of rheumatism. Passages round Cape Horn to and from the hot and temperate portions of the station, may be expected to excite the disease. It was, however, more tractable than it often is, all the affected, excepting three cases invalided, being cured on the station. But probably the name of "rheumatism," has been abused, or the complaint often feigned.

There were 53 cases of inflammation of the lungs, and of their membranes and air-passages; all of them, with two exceptions, one of death, and one of invaliding, were cured on board the ships in which they occurred.

There were only seven cases of phthisis, and six of hæmoptysis; of the former, three terminated in death, and two were invalided; and of the latter, three were invalided. The proportion of consumptive disease is therefore not large. The ascertained loss from all diseases of the respiratory organs, acute and chronic, is only four: yet if all the persons invalided for phthisis eventually died, independently of those invalided for hæmoptysis, the mortality from pulmonic disease would be greater than that from fever.

There were 63 cases of dysentery, two of which terminated fatally, and one was invalided. Of other bowel complaints, diarrhœa, colic and common cholera, there were 418 cases; but, with the exception of five invalided, they were all cured on board.

The catarrhal cases amounted to 337. In many instances there was a good deal of febrile and respiratory disturbance, having much of the character of catarrhal fever; but they were all cured on board.

Of delirium tremens only one case in an *officer*! How this contrasts with what happens in the army.

There were 202 cases of venereal disease; viz, 118 of syphilis, and 84 of gonorrhœa. A large proportion of the syphilitic affections were contracted in the South Sea, principally at Otaheite, and neighbouring islands. There was something peculiar in the disease there; often without any appearance of chancre or appreciable lesion in the generative organs, syphilitic disease was developed in the groins; one case of syphilis proved fatal, chiefly by hæmorrhage from the anus.

Ulcerative cases were numerous, amounting to 335; of which, 20 required to be invalided. "Ulcer is a prevalent, generally the most prevalent, form of diseased action on the station. Few ships, if they are much in harbour especially, escape suffering from it to some extent, and that mostly in the hottest seasons. On first arriving from England, it generally assumes an acute character, makes rapid progress, involves the cellular tissue rather extensively, often becomes phagedenic, or sloughs, and is attended by much febrile disturbance. The resident inhabitants are prone to similar forms of disease, to various affections of the skin, and subcutaneous structure, and of the lymphatic system; the negroes, more especially, to elephantiasis, and some modifications of lepra. For these diseases there is evidently an endemic cause, connected, no doubt, with atmospheric heat, but not dependent entirely upon it.

Out of 335 cases of ulcer, the large proportion of 146 were in the *War-spite*. That ship—a ship of the line, and carrying the flag of the commander-in-chief—had, at the end of the year 1830, been 18 months with-

out change of position in the harbour of Rio de Janeiro ; she was, therefore, constantly exposed to the endemic cause of the disease prevailing there during a long period. Sometime after her arrival from England, the ulcerative diathesis began to declare itself. Slight injuries, musquito-bites, and other trivial lesions of the surface, were followed by diffusive inflammation terminating frequently in ulcer. The ulcer manifested sometimes diminution, but much more frequently violent increase, at the onset, of vascular action ; occasionally it became indolent soon after its formation, but in most instances retained long a dangerous degree of activity. As the season advanced, and the weather became so hot that the thermometer seldom fell below 80°, the diathesis became stronger and more general. Often, without the reception of any external injury, a pustular point, with high surrounding inflammation, most commonly near the knee or ankle-joint, was exhibited. Within a few hours from the first appearance of the affection, the inflamed circle was much extended, more tumid, and intensely hot, red and painful. From the edges of the pustular central point, which discharged, or rather yielded, on pressure, a small quantity of pus, phagedenic action commenced, and often extended with astonishing rapidity ; there were frequently extensive sloughs, involving large portions of the cellular tissue, before the destructive action could be arrested. In all such cases there was much febrile disturbance ; indeed, the disease might, with propriety, have been designated ulcerative fever. The treatment included and consisted chiefly in the application of general remedies. Till the destructive violence of action was subdued, reductive measures, especially drawing blood, both from the system and the inflamed parts, were freely adopted. The diathesis and development were the very reverse of the scorbutic, and an opposite line of treatment was pursued. Here they were clearly and closely connected with plethora and augmentation of vascular action. The disease was almost entirely confined to new men—recently recruited marines, and sailor-boys, many of them embarked for the first time. In many instances the subjects had passed suddenly from a state of complete indigence, under-feeding, and irregularity, to full and excellent rations, and to a life of order and of ease." Nothing could be discovered in the condition of the ship to give rise to the affection, that seemed attributable to her long continuance in harbour, and consequent long-continued exposure to its influence, in connexion with the peculiar susceptibility of a portion of her crew.

Year 1831.—We shall content ourselves with merely pointing out the differential characters of each year, having given so fully the prevailing disorders on the command.

The ratio of mortality in 1831, was almost exactly the same as in the preceding year, being under one per cent. Though the mortality was at the same rate nearly during the two years, there was considerable difference, on comparing them, in the causes of mortality. Thus, in 1831, there was less loss from fever than in 1830, while there was more from bowel complaints and accidents. In neither was the loss, from any source, considerable, excepting from that of accidents in 1831 ; nor was there any formidable or prevailing form of disease.

The mean numerical strength of the year was 2,521. The whole number of deaths during 1831 was 23, but six of them were the results of falls from

aloft, and other accidental causes, reducing the mortality, from disease, to 17, and the rate of death to life, the effect of climate, and the ordinary agencies of nature, to 6·7 per 1,000. The squadron suffered very considerably, however, from the number it was thought expedient to invalid. No fewer than 89 persons were thus disposed of, being at the rate of 35·3 per 1,000 invalided of the number employed. A large proportion of the cases were chronic inflammations, or their results; many of which might have been saved to the command, perhaps to the service, had there been hospitals for their reception on the spot; for it cannot be doubted that, in many instances, the time necessary to reach an English hospital will so aggravate disease as to render it mortal, which, eight or ten weeks before, might have been arrested, and eventually cured, under efficient treatment; that is, had the surgeon been able to add to a proper system of therapeutics, the room, the rest, the air, and the rightly ordered and rigidly enforced dietary, which a well constituted and well conducted hospital supplies.

There was only one ascertained death from all the diseases of the respiratory organs.

The number of diseases of the liver denominated inflammatory, whether acute or chronic, was proportionately larger than common, namely, 65; of which it was necessary to invalid nine. A large proportion of them, viz. 26, were in the *Lightning*. The ship was employed in the bay of Cape Frio, in retrieving treasure and stores sunk there by the wreck of the *Thetis*. The ship's company suffered considerable fatigue, and were much exposed to variety of weather, in working diving-bells, and other operations arising out of that undertaking. They could not escape the influence of miasmatal exhalation, and sanatory orders could not be so efficiently carried into effect, as under ordinary circumstances, and modes of life of a man-of-war. All the cases, with the exception of one invalided, were cured on board.

There was a rather large proportion of primary venereal affections, viz. 156; of which 101 were syphilis, and 55 gonorrhœa. Though the former were frequently tedious, they were all, with two exceptions invalided, finally cured on board. The ratio of syphilitic cases is high, particularly as compared with the gonorrhœal; a great majority of the former occurred in the Pacific. There is a striking difference in the frequency, as well as in the force of the venereal, especially the syphilitic form of the disease, on the two sides of South America; on the Eastern or Atlantic side, it is comparatively a rare and mild disease; while in the Pacific it is frequent, and often difficult to deal with, occasionally exhibiting peculiar features, and offering much resistance to treatment. In illustration of difference, as to frequency, it may be stated, that in the *Warspite*, during seven months, there was only one case of syphilis at Rio Janeiro; while in the *Seringapatam*, employed during the year in the Pacific, there were 26 cases. The former ship had a complement of 588, and lay all the time in the harbour, the ship's company having free intercourse with the shore; the latter had a complement of 300 and was a good deal at sea. Such difference is common, and difficult to explain; neither climate, at least in temperature, nor modes of life, as far as they are known, will account for it.

Ulcer was as frequent as ever, but less severe. In the *Warspite* it had lost much of its violence, and was less frequent. Out of 314, the number of cases in the squadron, it was found necessary to invalid no more than

eight; whereas in the former year, that measure was required in twenty cases.

Year 1832.—"The squadron enjoyed a very high degree of health during the year 1832, as compared with other portions of the service, with the civil inhabitants of places celebrated for salubrity, and even with itself, high as it then was during the two immediately preceding years. The ratio of mortality for the year, and having reference to every instance of death, whether from disease or accident, was 6.2 per 1,000. When it is considered that the greater portion of the command is intertropical, and that the ships' companies were often, some of them constantly, exposed to high degrees of atmospheric heat, the trifling loss sustained becomes more striking. The fact is interesting in every point of view, but especially as it shows, in connexion with many others which might be adduced, that simple elevation of temperature, however great, has little, if any, power in the subversion of health; or at least, that it does not occasion epidemic forms of disease, suddenly and extensively destroying life. The entire health-history of this part of the world leads to that conclusion. Tables like the present, could they be obtained through a long series of years, would confirm it. In connexion with the subject, it may be stated, that the *Warspite*, with an average complement of 600, lay the whole year in Rio de Janeiro harbour, and did not lose a man, and had only seven cases of fever, viz. two of intermittent, four of gastric remittent, and one catarrhal."

There were six deaths from fever, two from continued fever, and four from remittent. The latter happened, nearly at the same time, in the *Pylades*. The case is worth noticing. A party of men were detached from the ship to the Island of Macenasa, where a merchant vessel had been wrecked, and where some of the party from the *Pylades* remained 28 days. The island is 25 miles north of Pernambuco, close to the main land, which is high, the island itself being low, flat and marshy. The men employed on that service, saving property from the wreck, had hard work, and were exposed alternately to a powerful sun and to heavy rains. Some of them slept on the wreck, others in tents on the island. New rum was cheap and accessible, and absolute sobriety could not be preserved. Eighteen days after the commencement of those operations, fever broke out, and extended to 21 persons, four of whom, as has been stated, died. The fever was confined to the men employed about the wreck; though the *Pylades* lay twelve days close to the place, no one not so employed was affected; while the half of all those employed, were attacked. The Reporter cites this as illustrative of the importance of avoiding the predisposing causes of fever. The *Pylades*, herself, lay twelve days near its source, no one who continued to live and sleep aboard was affected by it. But with the shore-party, fatigue, long-continued exposure to the sun and to rain co-operating, irregularity in eating and drinking, abuse of spirits, and other excesses, were in full operation. Besides the men thus rendered susceptible were more directly exposed to the essential cause of the disease, from sleeping on the island, or on the wreck close to it.

Year 1833.—Though the rate of mortality is higher in 1833, than it was in 1832, it is yet low. It is lower than it was in 1830 and 1831, in neither of which did it reach one per cent. and is, compared with many other divisions of the world, whether in military or civil life, inconsiderable. From all causes, internal and external, there were 18 instances of death,

being in the proportion of eight persons dead out of every 1,000 persons employed. The causes of death were inflammation affecting various organs, consumption, fluxes, and accidents; their relative force being in the order in which they are stated. There were eight fatal terminations from inflammation, four from consumption, three from affections of the bowels, and three from falls or other accidents. It seldom happens in so large and extended a squadron, during so long a period, that the causes of death are so few in number, whatever combined force they may possess.

The mean force of the year was 2,217. The entire number of sick and hurt was 2,848, being at the rate of 1284.6 per 1,000; there were 18 fatal cases, being at the rate of 8.1 per 1,000; and 45 were invalided for change of climate, or having become unserviceable, being at the rate of 20.3 per 1,000. The ratio of sick and hurt, and of dead, is higher, while that of invalided is lower, than during last year. The proportions of sick and hurt, of dead, and of invalided, are less than they were in 1831; but while the proportions of dead, and of invalided, are less, that of sick and hurt is more than in 1830. The rate of invaliding is generally high in the naval service, especially, and, as has been stated before, in consequence of want of hospital accommodation in this command; during the present year, taking that circumstance into account, it is, being as nearly as possible, two per cent. moderate.

Of 18 deaths, which occurred in the year, three were from accidental causes, and seven, or almost half the entire mortality, from disease, were from inflammatory affections; as was a large proportion, namely, a fourth of the invaliding. Of these seven cases, two were from inflammation of liver, one of stomach, one of bowels, one of lungs, one of brain, and one rheumatic. Four of them were in the *Spartiate*, a ship of the line, not long from Europe, after being employed during winter in the North Sea. The sudden transition from low to high temperature, will sufficiently account for the frequency of such disease in her; 261 of all the cases in this order occurred in her, in six of which invaliding was resorted to; so that there was a reduction of 10 in her complement by inflammatory diseases.

There were 98 cases of primary venereal disease, 66 of syphilis, and 32 of gonorrhœa. As compared with last year, there is considerable diminution, as there is when that year is compared with 1831, and 1831 with 1830; there being in the first year of the series, viz. 1830, 202 cases; in the second, 156; and in the third, 119 cases. The mean force of the respective years in the same series being 2,933, 2,521, 2,579 and 2,217. The reason of the diminution is not evident. Yet there was a similar diminution in the amount of simple ulcers, compared with the last and two preceding years. In this, as in the specific venereal ulcer, there has been progressive, reduction not only in frequency, but also in force, during four consecutive years, commencing with 1830, and nearly at the same numerical rate. Thus, in the first year there were 335 cases, in the second 314, in the third 222, and in this, the fourth, 162. The coincidence is curious.

“An interesting question connected with the vital statistics of the navy, is that of the influence of sea and harbour duty relatively on the health of ships' companies. It is, however, as has been already stated, one difficult, if it be possible, as ships are generally employed, to answer satisfactorily. They are seldom more than a few weeks at sea without communicating with the land,

and remaining during longer or shorter periods in harbour. On going again to sea, either to cruise, or for passage, if disease should not prevail at the time, but break out within a moderate time afterwards, it may be doubtful whether such disease is to be ascribed to any thing in the harbour the ship has left, the place where she is, or in the ship herself. There can be no doubt, putting aside the causes of many pestilential diseases derived from certain harbours, that higher discipline, more regular modes of living, and more temperate habits can be obtained at sea than in harbour, and that so far the balance is in favour of cruising. But supposing that the harbour resorted to is not charged with any detrimental miasmata, a sea-life has many countervailing disadvantages, whatever their comparative amount may be. Want of fresh provisions, necessary exposure to all kinds of weather, imperfect ventilation from the necessity of shutting ports &c., lack of amusement, and a monotonous manner of life, after a while impair vigour, and cause or lead the way to many maladies. The fleet blockading the ports in the Mediterranean toward the close of last war, enjoyed a high degree of health, though long at sea; but that fleet united many of the advantages of sea and harbour duty life. It had the high order and regularity of the former with the fresh provisions of the latter, supplied by transport ships sent alongside. It had the excitement of a stirring though uniform occupation, and the hope of encountering the enemy. At sea the danger arising from the poisonous exhalations of some shores are avoided; beyond that it is not easy to determine whether, and to what extent, a life at sea is more salubrious than in port. In relation to this matter, as shewing that mere continuance in port is not prejudicial to health, a few particulars regarding the *Warspite* may be stated.

That ship, during the last term of service in the South Atlantic, viz. from June 1829 till January 1833, lay upwards of three years in the harbour of Rio de Janeiro. She was anchored there at first two years without change of place, was then absent five months at the Cape of Good Hope and Isle of France, when she returned thence to the anchorage at Rio, where she remained upwards of another year before proceeding to England. During the whole period, the ship's company enjoyed a high degree of health. During the last three years, the total number of deaths was eight, of which four were the effects of accidents, four only resulting from disease, viz. one from fever, one from consumption, one from tetanus, and one from diseased spleen. The ship's company varied a good deal in number, on account of the frequent reception and discharge of supernumeraries, but the average was upwards of 600; the rate of mortality from all diseases being about two, and from all causes about four in the 1,000. There was no ship on the station of the same force, and much at sea, with which a comparison could be instituted; even if the objections to the validity of such comparisons alluded to above, could be obviated; but, by whatever measure tried, a higher degree of health than that enjoyed in the *Warspite* cannot well be supposed."

Year 1834.—The rate of mortality was a little higher in 1834 than in 1833, higher by a third than in 1832, nearly the same as in 1831, and the same as in 1830. These two years, the first and the last yet examined, though the least healthy of the series, were yet healthy, the rate of mortality being something less than one per cent. Part of the small increase of this year, as compared with last, depends upon increase of febrile power, and part upon an unusual proportion of fatal affections of the brain, resulting from what may justly be considered accidents, though not external accidents, that is, from causes which were not necessary, and might have been avoided.

The mean force of the year was 2,231, being only 14 more than that of

last year. The total number of sick and hurt was 3,403, being in the ratio of more than 1500 per 1,000, the highest ratio of sick and hurt yet encountered on this station. But though the ratio of sickness is higher than in any of the four preceding years, some of the resulting ratios are equal, some lower. Thus the ratio of mortality is 9·5, the same as in 1830, the total number of deaths this year being 21.* The ratio of invaliding is lower than it was in 1830, much lower than in 1831, and almost exactly the same as in 1832; this year 53 were invalided, being at the rate of 23·8 per 1,000.

Inflammatory affections were numerous, even when compared with former years, on this station, and with other stations; 914 cases were under treatment, being upwards of 40 per cent. of numerical strength; so that almost every second man suffered from some form of inflammation. But though the number attacked was greater than last year by about six per cent. the loss by death was much less, while that by invaliding was not much greater. This year there were four deaths, being less than two deaths out of 1,000, while last year the proportion was more than three per 1,000.

There were 134 cases of inflammation of the lungs and their membranes, though only one death, and four cases of invaliding. The affections of the membranes, particularly those lining the air-passages and cells, were more numerous than of the substance of the lungs. Of the former there were 72 cases, of which 71 were in the *Spartiate*. In that ship there were, of all inflammatory affections of the respiratory organs, 103 cases, about three-fourths of all in the squadron. In the harbour of Rio de Janeiro there is great general tendency to bronchial disease, though varying much at different periods; this year it was very prevalent.

Out of 82 cases of disease of the brain, four terminated fatally. One was apoplexy—three were “drunkenness.”

Primary venereal affections were a little more numerous, and there was a considerable increase in simple ulcers.

Year 1835.—The rate of mortality is still lower during the year 1835 than it was during any of the five preceding years. It is strikingly low, however estimated, compared with other places and classes of persons, being that of one death out of every 200 employed nearly. It is difficult to account for such paucity of fatal result, when compared even with the results of former years on the same station. There was little difference in the nature of the service, or distribution of force—none from which such results could be anticipated; and the wreck of the *Challenger*, with long consequent exposure of the people, and much privation and hardship, was a disaster, from which increase of sickness and mortality was to be apprehended.

The mean force of the year was 2,622, an increase of nearly 400 on that of last year. The total number of sick and hurt amounted to 3,577, being at the rate of 1364·2 per 1,000; 14 of which terminated in death on the station, and 73 were invalided. The ratio of deaths, one of which was from accident, is 5·3 per 1,000.

* “A fatal case from atrophy, in the *Beagle*, was omitted; the return could not, at the time, be found.”

The ratio of invalided was 27·9 per 1,000, which is higher than that of last year, or of any preceding year, except 1831. It is remarkable, however, that eight were invalided for epilepsy, four from one ship. There was probably malingering here.

There was a notable decrease of inflammatory affections of the lungs, but an increase of phthisis.

Year 1836.—There is little in the Tables of this year to elicit remark; they have much similarity to those of the six preceding years. The ratio of mortality is not so high, nor so low, as in some of the foregoing; it is about equal to the average of the seven years of which it is the last. The highest was 9·5 per 1,000, occurring in two years, 1832 and 1834; the lowest was 5·3 per 1,000, that of 1835; this year it is 7·4 per 1,000. The same remark applies to the ratio of sick and hurt and of invalided, with this qualification, that the ratio of the latter is higher than that of any other year, excepting 1832, than which it is very little lower.

There were 69 cases of invaliding, being in the ratio of 32·1 per 1,000. The ratio is high, comparing it with most years on the station, and with other stations. The great majority of invalided cases were from inflammation; cutaneous diseases, including scrofula and syphilis; spasmodic disease, including epilepsy and ulcers; and accidents, exclusive of ruptures, of which, however, there was an increased number.

The Reporter presents us with a Table for seven years, from 1830 to 1836, shewing the total number of cases; the number of all diseases and injuries, in classes; the number of cases sent to hospital, invalided and dead; with the ratio of each per 1,000 of mean strength.

This Table shows that the annual rate of mortality, on an average of seven years, in the South American command, was, from all causes, 8·9 per 1,000; from disease, distinguished from external causes, 7·7 per 1,000 of force. It should be observed, that the ratio refers not only to persons dying in the command, but also to those who died afterwards from disease, which originated, or appeared to originate, there; for the invalids sent to England have been carefully traced, and as many of them as died in home hospitals have been added to the mortality abroad, and included in the sum total from which it is deduced. Thus, it is presumed, a complete view of the influence of the climate is given.

The aggregate numerical force of the seven years was 17,254, which was reduced by death to the extent of 136 only on the station, and 19 in home hospitals, making a total loss of 155 by death. But of 136 fatal cases which happened on the station, 21 were the result of external injuries, falls from aloft, and other accidental causes, bringing down the number of deaths from disease within the limits of the command to 115; so that the average annual loss by death, the effects of climate, and the ordinary agencies affecting life, was no more than 6·5 per 1,000 of the number employed in South America. This, or taking the more just and comprehensive view which includes the deaths from, as well as those on, the station, and which makes 7·7 per 1,000, is a singularly low rate of mortality; it is much under the average of the United Kingdom in persons of corresponding ages.

The Reporter regrets the impossibility of comparing the mortality in the

British squadron with that of the French or United States' squadron, or with that of the inhabitants of the sea-port towns of South America. He remarks that—there has long been little doubt respecting the salubrity of the climate of South America, at least of that large portion which stretches from the equator on the east, south, west and north, over the whole of its remaining extent. Experience had proved the remarkable immunity which it enjoyed from such epidemics as those which often devastate the West Indies, the tropical shores of Africa, or as are sometimes severely felt in the East Indies. But a position may be exempt from such violent visitations of disease and sources of mortality, and may yet not be highly favourable to health, as this is now satisfactorily shown to be. When in connexion with the vast extent of the continent, it is considered that a great portion of it lies within the tropics, that most of it is still in a state of nature, almost all of it thickly covered with vegetable and animal matter, in vigorous growth, or rapid decomposition, and that creeks, lagoons, and marshes, are in many places abundant, its freedom from violent epidemics, independent of its general healthiness, is indeed remarkable. No satisfactory explanation can be offered.

Altogether 485 persons were invalided during the seven years; of which 466 were on the station, and 19 in home hospitals belonging to the station. The ratio per 1,000 of the whole number invalided, on account of disease exhibiting itself on the station, or of injuries received there, is 28 per annum during the seven years.

A second Table shews the total number of cases (from 1830 to 1836); the number of all diseases and injuries, in classes; the number invalided and dead; with the ratio of each per 1,000 of attacked.

The aggregate force of the seven years being 17,254, the first striking fact established by the Table is, that the mortality from fever was in the ratio of 1·3 per 1,000 per annum of the number employed, though the number treated annually was in the ratio of 115 per 1,000 of force, the whole number treated being 1,984. Probably, however, many of these were cases of symptomatic fever.

Under the head of consumption, 55 cases were treated; of which 15 terminated fatally on the station, and 10 in home hospitals, out of 14 transmitted from the station, making a total of 25 fatal cases; the annual rate of mortality from the disease was, therefore, 1·5 per 1,000 of the employed. Seeing that 30 of the 55 persons attacked were cured, it may be inferred that all the cases thus classed were not cases of true consumption; that though they simulated, they did not all really possess the true tuberculous character. Though the mortality from consumption is so little, it is, including the deaths in home hospitals, more than from any other disease in the command.

From all diseases of the lungs, exclusive of one from catarrh and one from bronchitis, which probably should have been added to the consumptive, two from hydrothorax, and one from dyspnoea, there were 35 deaths; being at the rate of something more than two per 1,000 per annum mortality from this division of disease.

There were 282 cases of disease of the liver, designated "inflammation," of which seven terminated fatally, six on the station and one in home hospital. The annual rate of deaths is 1·20 per 3,000, which, considering the

prevalent high temperature of the station, is low. Neither, keeping that agency in view, was the loss to the command by invaliding, from this disease, great, the whole number thus disposed of being 37, a little more than two per 1,000 per annum of force.

There were 373 cases of dysentery; of which 17 terminated fatally, 16 on the station and one in home hospital, and 13 were invalided. The annual rate of mortality from the disease is, as nearly as possible, one per 1,000. After consumption and fever, this was the most fatal form of disease in the command.

There were only ten cases of delirium tremens, occasioning two deaths in the seven years.

Thus, says the Reporter, there were 125 deaths from principal diseases and accidents. There were, besides, two suddenly fatal cases designated asphyxia, one of palsy, one of diseased heart, one of cynanche, one of erysipelas, four of dropsy, one of scirrhus, one of syncope, one of bronchitis, one of sun-stroke, one of insanity, one of inflammation of the heart, one of hydrocephalus, one of jaundice, one of catarrh, four of rheumatism, one of dyspnoea, two of abscess, one of diseased spine, and three of disease, in the returns, designated drunkenness; making, in addition to the deaths from classified diseases, 30 fatal cases, and giving, with them, the total 155 cases of death on and from the station in seven years. The Reporter comments, in conclusion, on the infrequency of organic obstructive disease, such as jaundice and ascites, as evidence of the salubrity of the South American climate.

Another Table shews the total number of frequent, but not often fatal, diseases; the number sent to hospital, invalided and dead; with the ratio of each per 1,000 of mean strength.

These diseases are—superficial inflammation of the extremities—rheumatism—catarrh—and diarrhoea.

In respect, says the Reporter, of the first, the superficial inflammation of the extremities, there is no doubt that the nature of some parts of duty, especially that of cleaning decks by washing, and stoning, operates extensively; but then there is little doubt that some climates co-operate with the duty, and aggravate the evil. The inflammation in question is generally confined to the lower extremities, and to the lower part of them, seldom reaching above the knees. It often terminates in abscess, which, though seldom involving more than the skin and contiguous cellular tissue, sometimes extends deeply and widely, and proves tedious of cure. Such results, with the frequency of the disease, render it a source of considerable suffering, and temporary reduction of strength. The number of cases treated being 2,879 in seven years, the ratio per 1,000 of force is 166.9 per annum.

The annual ratio of rheumatic cases was 72.3 per 1,000 per annum of force, the total number treated being 1,248, of which 43 were invalided, and four, probably from attacking internal organs, terminated fatally. The annual ratio of invalided is 2.5 per 1,000 per annum of force, which, considering the nature of the service, the character of the disease, the difficulty which is sometimes encountered in detecting imposture, when it is feigned, that the name is sometimes applied to other affections, and the want of hospitals, is not high.

The ratio of attacked by catarrh is 139.8 per 1,000 per annum of force;

25 were invalided; being in the ratio of 1.5 per 1,000 per annum. The ratio of attacked is moderate, but that of invalided is high. One out of the whole number terminated fatally.

The ratio of cases of diarrhoea is 80.6 per 1,000 per annum of force; of which seven terminated in a chronic condition, which led to invaliding: none terminated in death.

A voluminous Appendix presents the details on which the preceding Tables and Calculations were based. We take our leave of the South American Station with any thing but a low opinion of its healthiness. The facts which have been stated in regard to it shew how utterly unfounded are many of our notions on the prejudicial influence of high temperatures.

II. WEST-INDIES AND NORTH AMERICA.

Year 1830.—Tables of the character already alluded to in the Report on the South American Squadron usher in the observations and inferences of the Reporter. He remarks that—to ascertain the influence of climate on health in the most satisfactory manner, it would be desirable to consider that of the West Indies, and of North America separately. It would lead to more correct conclusions to have a set of Tables indicating the ratio of sickness, invaliding and death in each, the Bahama Islands being classed with the West Indies. The Bermudas form a kind of neutral ground, a connecting link between the West Indies and British North America, possessing some of the features of each, but not generally having the well-marked character of either. Their appreciable climate and morbid manifestations, however, are more West Indian than North American, and it would therefore be right, if not taken by themselves, to group them with the former, rather than the latter. But the whole being under one commander-in-chief, and the vessels continually changing places, passing from intratropical to extratropical latitudes, and *vice versa*, such Tables cannot be constructed.

The Reporter examines the question whether this disposition of the Naval Force is, on the whole, conducive to the health of seamen, and without deciding it either way, he concludes that the changes of climate augment inflammatory diseases though they diminish fevers.

The mean annual force amounted to no more than 3,326. The total number of sick and hurt was 5,070, a very large proportion, being at the rate of 1524.3 per 1,000. Of all the sick and hurt, 313 were sent to foreign hospitals, being at the rate of 9.5 per 1,000 nearly, likewise a large proportion. From various ships 138 were invalided, being at the rate of 41.4 per 1,000, and 40 were invalided from hospitals, making a total of 178 invalided during the year, and being at the rate of 55.3 per 1,000 of mean strength. Out of so large a number of sick, however, only 21 died on board ships, yielding the very low ratio of 6.3 per 1,000; but 54 of hospital cases terminated fatally, making a total of 75 deaths; the ratio of the total of mortality of mean annual force being 22.5 per 1,000. The numbers of hospital establishments within the limits of the station, and the consequent facilities of sending sick to them, with the practice of sending every person attacked by fever at Port Royal at once to hospital, will account for the relatively small number of deaths at sea.

The loss, continues the Reporter, to the service resulting from death, whether at sea or in hospital, was not great. In most tropical positions it would not be considered severe, and is any thing but formidable, the West Indies being a large portion of the field of service; but the loss to the squadron from invaliding was certainly considerable, and deserves consideration.

The most remarkable circumstance, on examining the invaliding column, is the small number found in it resulting from essential fever, and the proportionably large from the pure forms of inflammatory disease, viz. five from the first, and 54 from the last, on board ships. It is the more remarkable as regards fever, considering the number of cases of periodic fever found in the medical returns, which so frequently require, sooner or later, to be invalided; and it cannot be doubted that the smallness of the number on this occasion depended, in part at least, on the favourable change of climate, from hot to temperate or cold. But that very change would tend to increase the number of inflammatory attacks, and of those invalided on account of them.

The number of cases of idiopathic fever amounted to 759; many of them, however, were so slight and transient as to be designated ephemeral. The whole are divided, according to the medical returns into 586 of continued, 84 of remittent, and 89 of intermittent, fever; of the first, 86 were sent to foreign hospitals, four were invalided, and five ended in death on board; of the second, 48 were sent to hospital, and two terminated fatally on board; and of the last, eight were sent to hospital, and one terminated fatally on board. It is curious that out of all the cases of periodic fever so often requiring invaliding, not one was so disposed of; while four of the continued cases, where perfect recovery, when it takes place, is so much more common, were sent to England for change of climate.

The following statement bears on a curious coincidence, or fact.

"The Blossom (surveying ship) suffered more than any other vessel from a fever designated remittent. She had 76 cases, 46 of which were sent to hospital, where 10 terminated in death, and two deaths occurred on board. The disease broke out, and ran its course, in a few weeks, off Belize, a position abounding in the cause of periodic fever, two days after the ship's arrival there from the anchorage at Port Royal. There is difficulty, as there generally is, in tracing this fever, which appears to have been the true endemic West Indian fever, not ordinary remittent, to its source. No fever of the kind existed at Belize, or other point in the Bay of Honduras, at the time it broke out in the Blossom, nor does any appear to have occurred during its course. The necessary conclusion therefore is, that the cause of the disease was either generated in the ship, being an intrinsic product of herself, or was derived from an extrinsic source, at some place, where she had previously been, having lain so long dormant in the persons of those afterwards affected. The surgeon of the ship inclines to the former opinion, but confesses the difficulty of the subject, and does not enter on its discussion. He states that, while at Nassau in April (the fever broke out in July at Honduras) the ship's holds had been emptied, cleaned thoroughly, white-washed, and completely dried and ventilated, prohibiting the notion of want of interior clearness having any thing to do with the production of the disease. Such processes of clearing, perfectly cleaning, and then re-stowing ships of war in the West Indies, with the view of guarding against invasions of fever, are common; but it is a fact, however startling or difficult of explanation, that they are very generally followed, in no long period, by a serious visitation of the disease. What relation there is between the purifying process in question, and the subsequent eruption of fever, if it be an

operative relation, may never be satisfactorily known; that the one frequently, generally, follows the other, is certain."

Fever prevailed, too, in the Grasshopper, the Icarus, and the Magnificent; it occurred, also, to some extent in other ships, but, generally, it had little force; and, on the whole, the year 1830, though the loss in some ships was rather severe, cannot be considered unfortunate as regards West Indian fever.

Although the pure inflammation with fever (order Phlegmasiæ) amounted to 1,468 cases, only four deaths, viz. two from inflammation of the lungs, one from inflammation of the bowels, and one from inflammation of the throat, resulted from the whole on board; but 48 were sent to hospital, and 54, as already stated, were invalided; so that the temporary or permanent loss to the squadron was not inconsiderable.

Next in order of frequency were rheumatic cases; after which, inflammation of the lungs, of the liver, and of the throat, were most numerous, many cases of each occurring. Including hæmorrhage from the lungs, there were 36 phthisical cases; of which, 13 were sent to foreign hospitals, 11 were invalided, and two terminated fatally at sea, leaving 10 under treatment at the end of the year on board.

The catarrhal cases amounted to 556, of which four were sent to hospital, and one proved fatal at sea.

There were 47 cases of dysentery, four of which were sent to hospital. No one ended in death, and none required change of climate.

Diarrhœa was, as might be expected, frequent. There were many cases of common cholera, one of which was fatal, the only death which happened in the order Spasmi, though 488 cases were treated.

There were 139 cases of all forms of venereal disease, viz. 64 of syphilis, 39 of gonorrhœa, 7 of stricture in the urethra, 14 of bubo, and 15 of diseased testicle. Of the two last forms of disease all might not have a venereal origin, but there is little doubt that most of them had. Nine of the syphilitic cases were sent to hospital; one of the gonorrhœal, and a case of bubo were invalided, all the other men affected being cured on board: the detriment sustained by the disease was therefore not great: most of it was contracted at Halifax, and other northern parts. In the West Indies syphilis is comparatively rare, nor is gonorrhœa very frequent.

The ulcerative cases amounted to 309—rather a large number; many of which, proved tedious and difficult of permanent cure; 20 of them were sent to foreign hospitals for treatment, and six were sent home invalided. The disposition in some vessels to the ulcerative process, was great, almost every slight accident, abrasion, or small abscess, assuming that character.

Year 1831.—The squadron enjoyed a high degree of health, or, at least, a low degree of mortality. In few parts of the world, says the Reporter, comprising equal numbers and equal spaces, will there be found less annual loss of life than happened on that station in the year 1831. Out of a mean force of nearly 3,000 men, only 14 died at sea, and 20 in hospital, a low number in itself—low when compared with other naval stations enjoying higher reputation as to climatorial influence on health, and very low when compared with its own results on life at some other times. When exempt

from the peculiar, destructive fever, the product of their soil and climate—and, fortunately, they have frequent and sometimes long-continued exemptions from general epidemics—the West Indies may be pronounced healthy; at least, they are not fertile in other forms of disease which suddenly destroy life. In the year 1831 only one ship suffered from the fever in question, in an epidemic form, and that not in a severe degree.

The only particular we need allude to is the following:—The Sparrowhawk suffered considerably from continued fever, having had within a few weeks 109 cases, of which six terminated in death on board, and one in Port Royal Hospital, out of 17 sent there. The disease broke out on a passage from Jamaica to Chagres, after touching at the Bocca Chico, the mouth of the strait leading to the city of Carthagena. Fever of the worst form often occurs under similar circumstances, viz., ships, after having lain some time in Port Royal Harbour, proceeding to Chagres, remaining on that coast awhile, and then returning to Port Royal. In what way the climatorial influence of Jamaica co-operates with a similar or separate influence on the Spanish Main, in the production of West Indian fever, may not be ascertained; but a great many instances might be cited to show that there is such co-operation. The fever in the Sparrowhawk was, from the account of the symptoms, the pure endemic product of the West Indies, though not possessing a high degree of force. It may be stated, that there does not appear to have been any relation between the touching at Bocca Chico and the eruption of the disease.

Year 1832.—Low as was the rate of mortality within the limits of the West Indian and North American command in 1831, it is still lower in 1832. The more common forms of diseased action were, for the most part, mild and tractable, though some of them occurred in large numbers; and pure West Indian fever, the peculiar product of West Indian soil and climate, separate, and essentially different from remittent and other modifications of endemic fever, scarcely existed. It certainly did not exist generally or frequently, though a small number of isolated cases throughout the squadron, probably occurred. Few, if any, years pass without the appearance of occasional cases, nor is it probable that this year was free from them. When it is absent, or occurs in very small numbers, the West Indian portion of the command is not unfavourable to health; the northern division, though it frequently abounds in catarrhal, rheumatic, and slight bowel complaints, is not productive of violent and destructive forms of disease; and hence, in this, and similar years of total, or nearly total, exemption from West Indian fever, the united squadron exhibits, and will be found to exhibit, favourable returns, as to healthy condition.

Only 25 instances of death happened on board ships, giving the very low ratio of 6.9 per 1,000, though a trifling increase on that of last year. But the proportion of mortality in hospital was smaller this year than last, only 15 men having died out of 277 sent there, making a total of 41 instances of death—the ratio of the entire mortality on the station being no more than 11.4 per 1,000 of mean strength.

The Sparrowhawk, it will be recollected, suffered severely, in 1831, from “West Indian fever.” This year she suffered too, but the fever presented some difference of features. The cases amounted to 20, of which four ter-

minated fatally. The ship was anchored in Montego Bay, from the 4th to the 21st of January. A portion of the ship's company was landed for the purposes of protection, the slave population being in a state of insurrection, on a property called Unity Hill. The men occupied sheds on an eminence, at the point where the great river empties itself into the Bay, the land at the base, and some distance inland being a complete swamp. The temperature in the night was as low as 64° , rising during the day to 80° , the people suffering from fatigue, and perhaps from various kinds of excess. No combination of things could be imagined more likely to occasion certain forms of fever: fever soon made its appearance among the shore party, and prevailed to the extent stated above.

Delirium tremens rather obtained this year. All over the West Indies, as well as at Halifax, rum, and other intoxicating liquors, are cheap, and still too generally the object of keen desire among British seamen. When on leave, drinking to excess is yet a common practice, and in spite of the utmost vigilance, spirits are frequently, and by the most singular means, smuggled on board while ships are in harbour. Great pains are taken to prevent this, and there is no reason to believe that there was any relaxation of the preventive measures in 1832; yet there were 10 cases of delirium tremens, two of which terminated fatally at sea. The Reporter observes: the regulation which, some years ago, reduced the allowance of spirits to half the former quantity, was excellent, and has done much good. Whether the allowance might be further reduced, and yet be retained as a regular ration, may be questioned; but there can be no question as to whether commanding officers should have the power of unconditionally stopping the spirits of individuals, on the production of proper evidence, and that more as a remedial, than a penal measure. The practice, too, of allowing every lad as soon as he is rated the full allowance of grog, should be seriously considered. We decidedly agree with the Reporter on the impropriety of allowing lads spirits. They would be far better, in every way, without them.

Year 1833.—The health returns are less favourable in 1833 than they were in the two immediately precedent years; yet the difference is not great, the loss sustained is not severe, and the ratio of mortality—little more than one-and-a-half per cent.—cannot be considered formidable throughout a command which comprehends the West Indian Islands and adjacent coasts. The small comparative difference which appears against this year depends upon the operation of malignant cholera. Though there was a good deal of fever, there was little of the "West Indian"—hence the inconsiderable resulting mortality; for there are strong grounds for concluding, that whenever that form of fever prevails, there will be, without underrating the value of right treatment, great loss of life."

The mean force was 3,386. The number of sick and hurt was 5,335, yielding the large rate of 1575.6 per 1,000 of mean strength. Out of the whole, 382 were sent to foreign hospitals, 114 were invalided from various ships, and 25 terminated fatally at sea. Besides 114 cases of invaliding from ships, 21 occurred at hospitals, making a total of 135, and giving the ratio of 39.9 per 1,000 of mean strength. There were 30 cases of death in hospital, which, added to 25 on board ship, make a total of 55 cases of death, and give the ratio of 16.3 per 1,000 mortality of mean strength

of squadron. The ratio of mortality, though higher than in the two preceding years, is not high in itself, and is low when compared with many equal periods of time in the same places. The number invalided is greater than in the three preceding years, and is certainly considerable in itself. To lose four men out of every 100 through this channel is to suffer much detriment.

Year 1834.—The Reports are not quite so favourable as were those of the three immediately preceding years. The Tables of 1833 gave a higher rate of sickness and mortality than those of 1831 and 1832, and those of the present year are higher than any of the above-named. It is higher also than 1830 in all the tables indicating disease and accidental injuries, and their results, excepting that of mortality. Though the proportion of sick and hurt is greater in 1834 than it was in 1830, the proportion of deaths is less. In 1830 the mean strength of the squadron was 3,326, the ratio per 1,000 of sick and hurt 1524·3, total number of deaths 75, this year the mean strength is 3,636, ratio per 1,000 of sick and hurt 1658·7, total number of deaths 72, showing, though less strikingly than some similar returns, that the rate of mortality has no necessarily close connexion with the amount of sickness. But though the columns of the present year exhibit higher numbers than those of 1831, 1832 and 1833, they are not fitted, either alone or relatively, to excite wonder or alarm, especially in reference to the amount of mortality, of which the ratio is under 20 per 1,000 of mean strength. The increased mortality of this year, as compared with that of the three previous years, depends principally upon the greater prevalence and power of fevers, and partly on a larger proportion than usual of death from accidental causes, six cases of that kind having occurred, three of them from drowning.

There is a statement in this year's Report in reference to the malignant cholera, which, though not unique, is still not unworthy of notice. It may be added to some other and similar ones on record.

Eighteen cases of cholera appeared in the *President*; only 3 of the 18 men attacked by it died. It appeared in the ship in August, having been found to exist in the town (Halifax) a short time before. The ship was anchored close to the town. The ship's company, after the existence of cholera in the town was ascertained, were not allowed to go on shore, though one man, who had been employed at the admiral's house, near which place the disease did not exist, was sent on board the ship. Two other vessels of war, lying near the *President* had neither of them a single case of cholera. It has been omitted to state whether those vessels were further from the shore than the *President*, and what position they occupied in relation to the part of the town in which the disease broke out, and then chiefly prevailed. Four days after the appearance of cholera in the *President*, she was moved from her original moorings, near the dock-yard, to a point three miles distant in the harbour; after the change of place, no case of the disease occurred. The rifle brigade had suffered severely from the same disease some time in barracks, when they were marched to, and encamped at the bottom of the bay, a distance of several miles; with the change of place, the disease in them also entirely ceased. The same favourable results followed the removal of the 96th Regiment from barracks, where the disease was committing great ravages, to an eminence, distant less than a mile.

Year 1835.—The mortality in the united West Indian and North American Squadron was much greater during the year 1835, than in any previous year embraced by this Report, that is, from the year 1830 to the present.

"The mortality has been progressively increasing through a period of five years in the united squadron, the rate of increase being proportionate to, and dependent on increase in the force of febrile disease. During the first three years the increase was inconsiderable, and therefore, though it probably had much meaning in an etiological point of view, was not likely to attract much observation; but between the two last years, 1834 and 1835, the difference was striking; the number of deaths, on comparing the latter with the former, being nearly double. Progressive increase of this sort in West Indian fever, and in other endemic diseases, during a number of consecutive years, tending to and terminating in a general distribution of its agency, is often observed. It may be represented, in a general way, as taking the following course. After the lapse of a year or two, in which it can scarcely be traced, it occurs rarely and separately during another year or two. During another similar period it will arise more frequently, but still with considerable intervals of time and space; then, connected perhaps with a particular state of weather, it bursts forth simultaneously at various points of the island and its harbours; the endemic becomes epidemic, attacking at once ships, regiments, and citizens, and carrying off great numbers. After such a course, though it may linger for a little with greatly reduced force, in some places, a period, longer or shorter, of exemption ensues. The cause of the disease appears to be exhausted for the time, the stock accumulated, so to speak, worn out; and a certain period is necessary to its reproduction."

The Reporter asks the meaning of this. But, as neither he nor we can tell, we need not indulge in speculations on it.

The mean numerical force for the year was 3,199. The number of sick, being as usual a large proportion to the number employed, was 4,724; the number of cases sent to foreign hospitals was 505; the number invalided was 129, viz. 166 from ships, and 28 from hospitals; and the number dead was 120, viz. 38 on board various ships, and 82 in hospitals. The first, the number of sick, are at the rate of 1476.5 per 1,000; the second, or hospital cases, are at the rate of 157.8 per 1,000; the third, the number invalided, are at the rate of 40.3 per 1,000; and the last, or number of dead, are at the rate of 37.5 per 1,000 in reference to the mean strength.

The great and striking difference in the Tables of this year, as compared with the Tables of the five former years, however, is in the increased rate of mortality. The increase is occasioned exclusively by the increased frequency and force of fever, that disease being the cause of nearly five-sixths of all the fatal issues; while other causes of death are less numerous than usual. The fevers happened altogether in the South or West Indian division of the command: so that, were the numbers employed in the Northern division deducted from the numerical force of the entire squadron, the rate of mortality, though not so formidable as it often was many years ago in the West Indies, would this year be high.

The Reporter mentions some circumstances connected with the West Indian Fever as it appeared in the *Vestal*, which are not unworthy of attention. She was a small frigate-built ship, with a complement of 180 persons.

"She had 167 cases of primary attack, of which 139 were sent to hospital, and three terminated in death on board; 25 fatal terminations took place in

hospital. The disease made its appearance on board early in March, in Port Royal Harbour, without much severity or frequency, and without exciting alarm; but it speedily became more prevalent, and ere long general, with increase of intensity, and fatal force. On the 30th of the month the ship was moved from Port Royal Harbour, where, with two short exceptions, she had lain nearly four months, and anchored a mile and a half off, near a Key—a small, sandy, uninhabited island. The change was effected in the belief that the disease depended on something derived from the harbour, and that it would therefore cease soon after moving the ship to a distance. It however went on, after the change of position, with unimpaired frequency and force. It ought to be stated that the fever was not connected with want of cleanness, of ventilation, or of pure air, in the common sense of the phrase; for the holds had lately been cleared, cleaned thoroughly, and white-washed; windsails were diligently employed, and chloride of lime was sprinkled on the decks abundantly. Another circumstance ought to be stated, not for its rarity, but for its frequency, and its importance in considering the cause of this disease, more especially in ships. It is this; almost every person who joined the *Vestal* during the prevalence of fever was affected by it, but no person leaving her under the disease communicated it to another, in another place. And so it happens, if not universally, almost universally. Nearly every man who joins a ship in such a condition has the prevalent disease sooner or later; but no number of persons taken from such a ship, labouring under the disease in any stage, or in any force, and placed in a situation where the disease does not exist, though in the centre of a mass of healthy people, can excite it in a single instance. An accumulation of such facts—and there is a large accumulation—decides the question of the contagious power of the fever in the negative absolutely." The *vestal* sailed for Bermuda on the 28th of April, and the disease finally ceased on the 8th of May, in the 27th degree of north latitude.

Another statement, relating to the *Forte* frigate, is also worth noticing. There were 123 cases, five of which terminated fatally aboard; eight were sent to Port Royal hospital. The disease, though causing little comparative mortality, and in most instances mild, appears to have been the true West Indian fever. It is noticed chiefly on account of two circumstances, both of which are so constantly found connected with the disease on board ship, one of them antecedent to, and the other concurrent with, its eruption. The antecedent is the cleaning the holds, and otherwise most completely cleaning the interior of ships. The *Forte* had been five weeks in Port Royal Harbour, undergoing such a process, the people meantime living on board the *Magnificent*. She sailed for Vera Cruz on the 11th of June, and three days after the disease broke out. The concurrent circumstance is the place in the ship where the disease first appears, viz. the immediate neighbourhood of the pumps. So it was in this ship, so it was in the *Rainbow*, and so it will be found in a great majority of cases to be.

"The *Dee* (steam ship) had 47 cases of fever, all of which were sent to hospital, where eight of them proved fatal. There is nothing very remarkable either in the number affected, or the resulting mortality; but there is something remarkable in the progress of the disease, as to time, in the ship. Instead of occupying, as it commonly does, a month, or two or three, the disease, though not equally, embraces the greater part of the year. Something similar is observable in the steam ship *Rhadamanthus*. More time and a larger field of observation are required to settle the point; but if such diffusion, as to time, in the operation of the cause of fever, were found to hold generally in steamers, it would be interesting to inquire whether it was connected with the steam, or, rather, with the heat which produces it."

What occurred in the *Rainbow*, may be alluded to. The ship had lain in Port Royal Harbour six weeks previous to the appearance of the fever aboard, which happened in the middle of July; it was not extinguished till the close of October. In the surgeon's journal it is stated that the ship's company were removed from the *Rainbow*, after the fever had been some time in progress, into the *Magnificent* "to have the holds cleaned, fumigated, ventilated, &c."—"the removal to the *Magnificent* seemed to check it, but after a short time it commenced again, particularly with those people who were obliged to keep watch on board (the *Rainbow*), the marines, midshipmen, &c. though not sleeping there, but merely going to keep their watch, and returning when it was over." The Reporter observes that—"the removal of the people from a 'sick ship,' in a case like the present, is a point of great interest both practically, and doctrinally. If the removal were to a place in itself free from the cause of the disease, the writer of these remarks believes that the remedy would be complete, and that with it the disease would entirely cease, excepting in such persons as had imbibed its cause before they left the 'sick ship.' In the case of the *Rainbow*, the marines, &c. who returned to her for the discharge of certain duties, and who are said to have suffered particularly after being moved to the *Magnificent*, were evidently exposed by such a return, to a certain extent, to the original cause of the fever."

Year 1836.—"The mortality," says the Reporter, "in the united West Indian and North American squadron was remarkably small during the year 1836, in itself, and as compared with that of 1835. It will seldom be found so inconsiderable on that station, and on others occupied by the royal navy; it is often greater in the civil population of Great Britain, among persons of corresponding ages, and in the absence of severe and spreading epidemics. In 1835 the mortality was nearly four per cent.; in 1836 it was under one per cent. The difference as to fatal results, depended on difference in the prevalence and force of fever, being great in the former, and trifling in the latter. The cause of West Indian fever, the peculiar product of the locality, which, through some preceding years, had been becoming progressively more generally diffused, and more forcible—from whatever source, or through whatever agency—had in the year 1835 acquired its highest degree of force and development; the process by which it is formed was completed; it was evolved and exhausted; and hence the extreme rarity, or absence of the disease in 1836. In such a case the inquirer is compelled to judge by the results. It would have been impossible to have foretold, during the progress of the disease in 1835, that it would not have extended to, and become more general, and more violent, in 1836. There were no means of ascertaining that the cause had then reached its maximum—the period of maturation—and that it would consequently cease to act, or would act seldom during the following season. In this, as in other endemic epidemics, the cause is formed, evolved, and becomes operative in different degrees of force and frequency at different periods of recurrence. It was more generally diffused, and more destructive at Jamaica, in 1825, than in 1835, as it had also been at some former periods."

The Reporter states that the *Carron* and *Alban*, two steamers, suffered more from fever, in proportion to their complements of men, than any other ship on the station. The evidence, so far as it goes, is in favour of the opinion that the fever in those vessels was the West Indian. The Reporter indulges in a curious vein of remark. He says:—

The vessels being steamers, and the season not generally productive of the disease—did the heat requisite for the production of steam, precipitate the evolution of the cause. No degree of heat alone can excite West Indian fever, or any other fever in the right sense of the word. But the question is—did the heat here, co-operating with the endemic morbid influence of the spot, so act upon the structural parts of the vessels, as to call into action the cause of the disease, which, but for that high heat, would not have been evolved then, and, under other circumstances, might not have been evolved at all? The question is important in itself, and involves another still more important, to the following effect. If, as there is reason to believe, a high degree of heat is necessary to the production of the disease in ships, in so far as it is derived from an *internal* source; and if high degrees of heat have the power, as there is also reason to believe, of precipitating, and more speedily perfecting the cause of the disease, as acting more energetically on their structural parts, contributing the results of certain decomposable materials to that effect, might not the knowledge of such facts be acted on for the prevention of the disease, in so far as it has an internal origin, and is occasioned by changes effected in the materials of the ships themselves? The preventive measure which suggests itself is, the application of a certain degree of heat for a certain time to the wooden materials of ships, or perhaps more appropriately to the wood of which they are to be constructed—say a temperature of 160 degrees for a month. It is reasonable to infer, that such a degree of heat, applied for such a time, would dissipate the decomposable matters, on which West Indian fever on board ship, in many cases, must in some way depend. It does not appear probable that the process would act detrimentally on the woody fibre, and impair its durability; nay, it might improve the one, and increase the other. That, in many cases, and the worst cases, West Indian fever is essentially connected with some agency in the interior of ships, altogether independent of personal communication, or collections of extraneous matters, all discriminative experience shows.

As in the Report from the South American station, we are presented with several Tables for the seven years, from 1830 to 1836. The *first* shews the total number of cases; the number of all diseases and injuries, in classes; the number of cases sent to hospital, invalided and dead; with the ratio of each per 1,000 of mean strength.

The Reporter observes, in reference to this Table, that the annual rate of mortality, on an average of seven years, was, from all causes, diseases and external injuries, 19·6 per 1,000 of entire force; and from disease, independent of injury, 18·1 per 1,000. It includes, besides the mortality on the station, the deaths which occurred in home hospitals, from disease contracted within the limits of that station; so that 33 invalids having died in English hospitals, the mortality from disease on the station was in the ratio of 17·5 per 1,000 per annum.

Comparing the mortality in and from this command with that resulting from service in South America, it will be found to be, from all causes of death, more than double; from disease, distinguished from external causes, as 18·1 to 7·7, the proportion of death from disease, in relation to accident, being much higher in this command, than in the other.

Yet something more than doubling the mortality of South America is not
No. LXVI. Z

productive of formidable results; nor in this command, the greater part of which is constituted by the West Indies, and which had epidemic cholera, though to trifling extent, added to the ordinary causes of death, will mortality at the rate of 18 per 1,000 per annum appear excessive. When the nature of West Indian fever is considered, and the rate at which it sometimes prevails, and proves fatal, the rate of mortality will rather, and in opposition to generally received impressions, appear small. The most fatal year was 1835, when the ratio of deaths, from all causes, rose to 37.5 per 1,000 of force, and from fever to 30.6. The following year it fell to 9.2 per 1,000 of force, from all causes, including external injuries.

The annual ratio per 1,000 of sick and hurt was 1486.3, the total number placed on the surgeons' lists being 34,982, and the numerical force of seven years 23,531.

The number invalided was also high, viz. 926, being in the ratio of 40 nearly per 1,000 per annum of force.

The reduction of active force in the command was, from invaliding and death, nearly 59 per 1,000 per annum; so that, though the loss by death, keeping in view the nature of the climate, was small, the total reduction of number was considerable.

Comparing, he adds, these ratios of attacked and invalided with those in South America, it will be seen that they are considerably higher, though that of attacked, considering the great difference in mortality, is less so than might have been anticipated. The annual ratio of sick and hurt per 1,000 in the South American command was 1310.7; that of invalided 28. Hence, while the reduction of force, by death and invaliding, in the West Indies and North America, was in the ratio of 58.9 per 1,000 per annum, in South America it was only 36.9. Had South America possessed the advantage of hospitals, it may be inferred that the loss, by invaliding, would have been considerably less than it actually was.

The *second table* shews the total number of cases, the number of all diseases and injuries, in classes; the number invalided and dead; with the ratio of each per 1,000 of attacked.

The most striking result brought out by this Table is the mortality from fever, especially when compared with the mortality from the same cause in South America. In this it is in the ratio of 11.2 per 1,000 per annum of strength; in that it was 1.3 per 1,000 per annum. The mortality from fever was therefore nearly nine times as much in this command as in the other. Whereas in South America it was as 1 to 7; in this command it is considerably more than half of the total mortality, which amounted to 19.6 per 1,000 per annum, though malignant cholera, a new disease here, occurred to augment the mortality from other causes. Had the command been confined to what is commonly called the West Indies, to the Carribean Islands, and adjacent shores of the Spanish Main, and Gulf of Mexico, and to the Bahamas, not united, as it was, with North America, the rate of mortality would have been much higher; it may be assumed that it would have risen to 15 per 1,000, by fever, of the employed annually.

The mortality from fever was confined to the southern, or West Indian, portion of the command; on the other hand, a large proportion of the mortality from original inflammatory disease was in the northern, extra-tropical part of it.

The total number of cases treated under the denomination of fever was 4,932; but the great majority were trivial febrile attacks. The aggregate force of the seven years being 23,531, the annual rate of febrile attacks was 209.6 per 1,000. Of the whole number affected, 1,124 were sent to hospital for treatment, 70 on account of imperfect recovery were invalided, and 264 died. The annual ratio per 1,000 of the first is 47.8, of the second 2.9, and of the last, as already stated, 11.2. Of the fatal cases, three were in home hospitals; the subjects were invalided for the effects of fever, but the name of the primary disease was retained; hence the anomaly of deaths in England by West Indian fever.

There were 519 cases of inflammation of the lungs, and their membranes; of which, 99 were sent to hospital, 26 terminated in a state which led to invaliding, and 22 ended fatally. The annual ratio of attacks was 22 per 1,000, of hospital cases 4.2, of invalided 1.1, of dead nine, of mean force. Comparing these ratios with those in South America, it appears that, while that of attacked is lower, that of invalided nearly the same, that of dead is nearly double. It is probable that frequent sudden transitions from high to low degrees of temperature, in this command, contributed to increase of severity, and fatality in result.

The mortality from inflammation of the liver was less by a half in this station than the South American. The annual ratio of deaths from disease of the liver was one in 5000 of the employed.

Under the head of "consumptive diseases of the lungs," 114 cases were treated; of which, 52 were sent to hospital, 56 were invalided, and 44 terminated fatally, 28 on the station, and 16 in home hospitals. The ratio both of attacks and of deaths is much higher than in South America; in this command the attacks are 4.8, the deaths 1.9, in that the attacks were 3.2, the deaths 1.5, per 1,000, per annum, of strength.

After fever, consumption was much the most fatal form of disease in the command; after that again, inflammation of the lungs was most fatal.

Two hundred and eighty-seven cases of dysentery were treated; of which 42 were sent to hospital, 15 were invalided, and six ended in death. The ratio of attacks and of deaths is low, the last strikingly so, when it is considered that a large portion of the command is within the tropics. The mortality is not a third of what was suffered from the disease in South America, though it was not severe there.

The ratio of attacks of *delirium tremens*, as well as of deaths, is nearly double of what occurred in South America. It is remarkable that a great portion of them were in one year, 1832.

A Table is given of the *frequent, but not often fatal diseases*.

Numerous, says the Reporter, as were superficial inflammations of the extremities in South America during the seven years of this Report, they were greatly more numerous in the West Indies and North America. Whereas they were in the ratio of 166.9 per 1,000 per annum of force in that command, they were in the ratio of 228.3 in this, the number treated being 5,372, and amounting to nearly a sixth part of all the cases placed on the surgeons' lists. Out of the whole number, one, from change of character, or superinduced disease, terminated fatally.

Though the rheumatic cases were less numerous in this command than in the other, they were much more detrimental to force. Here the ratio of

attacked was 69 per 1,000 of force annually, there it was 72.3; but here, in addition to 133 sent to hospital for treatment, 121 were invalided; whereas there no more than 24 were sent to hospital on the return of ships to England, and 43 invalided. In South America the annual ratio of invalided was 2.5 per 1,000 of force; in the West Indies and North America it was 5.1, or more than double. It is difficult to account for such difference in results from this disease; the difference of structure in the two commands, as to temperature, suggests itself; but then it does not appear why it should not act in augmenting the frequency, as well as the severity, of attacks in the West Indies and North America. The same number of cases terminated fatally in both commands, viz. four; the ratio of death to force is, of course, a little lower in this command than in South America, while in relation to attack it is higher.

The ratio of attacked by catarrhal disease was much higher in this command than in the South American; it was 181.8 per 1,000 per annum of force here, while there it was 139.8. In the South American there were 25 cases of invaliding, in this there were only nine; but in that command there was only one fatal case, while in this there were three fatal cases.

The ratio of attacked by diarrhoea was also much higher in this command than in the South American; here it was 110 per 1,000 annually of force, there it was 80.6. Dysentery, on the other hand, was much more severe in the South American command than in this.

An Appendix of Tables concludes this, as it did the former Report, and is sufficient evidence of the indefatigable industry of the compiler.

We must defer to our next number the conclusion of this Report. In the mean time we would direct our readers' attention to it, and recommend them to add the facts that it embraces to those contained in the Army Reports. Altogether, those facts are extremely valuable.

ON THE HISTORY AND PROPERTIES, CHEMICAL AND MEDICAL, OF TOBACCO, a Probationary Essay presented to the Faculty of Physicians and Surgeons, Glasgow. By *Henry Wilson Cleland, M.D.*, Lecturer on Medical Jurisprudence in the School of Medicine, Portland Street. (A Candidate for Admission into that Body.) Quarto, pp. 68. Glasgow, July 1840.

THIS is a book of the right sort. One like Burton's *Anatomy of Melancholy*, or Henderson on Wines, or, si liceat magnis componere parva, John Knox's (*not the reformer's*) *Curator's Vade Mecum*. Dr. Cleland has taken up smoke in a right substantial fashion, and if so light a matter could be made so much of, what could he not do with a weightier! We would recommend the faculty of physicians and surgeons of Glasgow to elect him forthwith. We would bet a pound that the faculties of the whole faculty would be gravelled to produce such another work.

Dr. Cleland apologises for choosing tobacco for the subject of his thesis. Upon our honour we acquit him. His essay is worth all the theses we have ever seen. What can a young man know of tetanus, or fever? He can, at the best, but make a dull compilation, and if there is originality it is probably pertness. But tobacco and a pipe may be *puffed* by the inceptor candidate as well as by the "sad and learned" doctor of threescore, nay, perhaps, a great deal better by young lungs than by old ones. Then make no apology, Dr. Cleland, we beg.

The Doctor tells us, in his Preface, that he might, if he had liked, have written a book entirely medical and supremely dull. Or, he might have compiled one with not a smack of physic about it. He has done right to do neither.

"We have chosen," quoth he, "to pursue a middle course; and while we hold, as a basis, the medical properties of the plant of which we propose to treat, we will illustrate, as much as possible, details of a purely scientific nature, by those perhaps less instructive, though more brilliant and pleasing passages, which shed such a glow of light over the departments of literature. We are the more inclined to adopt this view, from the splendid and vivid galaxy of literary characters which adorned Great Britain in the latter end of the sixteenth, and the commencement of the seventeenth centuries—the very period at which this drug was introduced, and very much employed in this country. The poetical writers of that time, too, especially those of the dramatic department, were not, as is too commonly supposed, mere imaginative visionaries, who 'piped on reeds or whistled on straws;' but men endowed with strong powers of observation, of perception, and of judgment; and who had the boldness and hardihood to express whatever they thought, on every subject, in a manner quite unexpected, but no less welcome in those ages of comparative tyranny.

Luxury and abuses of every shape were then, as they have always been, the proper objects of satire and reprehension; and these were furnished, as was to be expected, in a direct proportion to the extent into which the former had been indulged, or the length to which the latter had proceeded. Amongst these, none were handled so caustically, or in so complete a manner, as the abuses in medicine; and at no part, it is believed, in the literature of any time, are we so much indebted for insight into medical doctrines and medical practice to the dramatists and satirists, as at that of which we are now speaking; and if it be true what has been said of the great Marlborough, and of the still greater Chatham, that their knowledge of English history was mainly derived from the perusal of Shakspear, it might with perfect safety be averred, that by the careful and rigid study of the works of such men as Jonson, Beaumont, Fletcher, Massenger, and Burton, a mass of medical facts and medical opinions might be obtained, infinitely superior to those contained in the works of the physicians of the times in which they lived, and which, even at this day, might put to shame the *passes* of the mesmerists, or the *infinitesimals* of Hahnemann. Indeed, it is to these, and not to the professed writers on medicine, that we must look for our information regarding, not merely the customs and peculiarities of medical men—a subject perhaps treated in a superior manner subsequently by Moliere—but, in reality, respecting the routine of that and of the preceding century, and more especially the opinions of the ancient physicians; for while Helmont, Borrichius, Anthony, Fludd, and a multitude of others, were revelling in all the absurdities of a universal remedy, and of

————— 'That stone which here below
Philosophers in vain so long have sought;'

While Riverius and Ferrand were attributing all that they could not with facility

comprehend, to the very convenient alternative of 'certaine occult hidden qualities;' and while Foreman, Hoyden, Withers, and an innumerable host beside, were

'Trowling the Trine, the Quartile, and the Sextile,
Platic aspect, and Partile, with his Hyleg,
Or Alchochoden, Cuspes Horoscope;

Or,

'Intent on the erection of a scheme
For my great madam's monkey, when 't has ta'en
A glyster and bewrayed the Ephemerides.'

Jonson had already created a Subtle and a Sly, a Face, a Sordido, and a Sir Epicure Mammon."

Our readers may already see the man they have to deal with. Hearty in the cause, he lavishes illustrations and quotations most profusely on his text, and we might almost say of him

"Schœnobates, augur, medicus, magus, omnia novit."

We intend accompanying Dr. Cleland through his thesis, and giving our readers a spice of what he offers. We cannot of course quote all, but what we shall give will afford a sample, at all events, of what remains.

HISTORY OF TOBACCO.

Dr. Cleland may well observe that a *cloud* of obscurity hangs over its origin. Nothing great but has a traditionary source, and there is as much dispute on the spot that may claim tobacco for its own, as on the natal place of the first Romans. Dr. Cleland, however, is a greater than Niebuhr in his way. The Doctor laments the lies that have been told, and repeats the pithy sarcasm of Walpole, that "as the readers of history love certainty, it is pity the writers do not."

Keeping out of view, however, says the Doctor, the celestial origin fancifully assigned to it by Sylvester and Thorius, and the diabolical parentage which was conferred on it, in jest, by Ben Jonson,* and spitefully by the Abbé

* Vide Song at the end of the Masque of "The Gipsies Metamorphosed," works, vol. vii. p. 413; Lord Bacon supposed that, into "the ointment which witches use," tobacco entered as an ingredient. (*Sylva Sylvarum*, cent. 10, 976.) In the

"Proclamation,
Or approbation,
From the king of execration
To every nation
For tobacco's propagation,"

the Water Poet assigned it an infernal descent; and in a proeme to a reprint of Skelton's "Elinour Rummin," the deceased laureate's ghost is made to say,—

"For in King Harry's time,
When I made this rime,
Of Elinour Rummin,
With her good ale tunning,
That time did not know
To puff and to blow

Nissino, we observe that claims for the distinction have been raised in behalf of the four great continents of the world—of Asia, Africa, Europe, and America.

Chardin, continues our author, who was in Persia about the year 1670, relates in his travels, that tobacco had been cultivated there from time immemorial; and Murray is persuaded, that long before the discovery of the Western World, the smoking of this herb was in common use among the Mongols and Tartars. Bell of Antermomy asserts, that "it is reported the Chinese have had the use of Tobacco for many ages;" an opinion in which Pallas completely coincides, from a consideration of their bamboo pipes, and of the singular mode in which they inhale the smoke. While Rumph, who resided at Amboyna towards the latter portion of the seventeenth century, found it universal over the East Indies, even in countries where Spaniards or Portuguese had never been.

In Savary's "*Parfait Negociant*," it is stated, that the inhabitants of Persia have been acquainted with tobacco for four hundred years; and he suggests the idea, that the custom was received from Egypt, rather than from the East Indies, where it has been only cultivated since the beginning of the seventeenth century; while Professor Lichtenstein, who lived at the Cape of Good Hope for several years at the commencement of this century, is inclined to assign the *south* of Africa as the primary situation where tobacco was employed. "It is remarkable," he observes, "that the custom of smoking and snuffing certain acrid narcotic herbs was in activity among the Beetjuanen race, long before their intercourse with the Europeans. These customs were probably introduced by slaves of African stock into the West Indies, from which it has come to us. So that in the Beetjuanen we have to respect (verehren) the oldest teachers (Lehrer) of this custom, which for a century has been so universal in Europe."

Liebault, in his "*Maison Rustique*," (published 1582,) asserts, that tobacco exists naturally in Europe; and that before the discovery of America, he had actually procured some in the wood of Ardennes,—a statement similar to that of Libavius, that it grows wild in the Hercynian forest. And Eulia Effendi mentions in his travels, that he found a tobacco-pipe still in good preservation, and retaining the smell of smoke, imbedded in the wall of a Grecian edifice, which had existed since before the birth of Mahomet; and which, in his opinion, incontestibly proved the antiquity of the practice.

But it is refreshing to see how quickly Dr. Cleland dispatches Chardin,

In a piece of white clay
As you do at this day,
Sucking and drinking
A filthy weed, stinking,
Was ne'er known before,
Till the Devil and the More
In the Indies did meet,
And each other did greet;
With a health, they desire,
Of stink, smoke, and fier,
Good physick of course,
To cure a sick horse."

Murray, Bell of Antermony, Pallas, Rumph, Savary, Professor Lichtenstein, Liebault, and Eulia Effendi. He proves these chroniclers of smoke in a twinkling to be, like Ferdinand Mendez Pinto, liars of the first magnitude, and tilts them over with as much facility as the Lord of Eglintoun would his own dummy.

America, which makes out so good a case for the original possession of the "great pox," seems to have quite as good claims, or better, to the original ownership of the great weed. For, on the third island belonging to that continent at which Columbus touched, namely, Cuba, and at which he arrived on 28th October, 1492, we are told,* that some of his men who were sent to explore the country, brought back the information, that "by the way they saw many people, who always carried a lighted firebrand to light, fire, and perfume themselves with certain herbs, which they carried along with them;" which is the first notice—imperfect though it must be allowed to be—of the practice of smoking, what was at a subsequent period ascertained to be, tobacco.

But, in spite of M. Merat, who asserts that Europe has the honor of having first *snuffed*, that seems to be the oldest fashion. And in its source we may perceive the reason of a practice which, to the uninitiated, appears one of sheer and unmitigated beastliness. There is something divine and inspiring in it, and now we understand why it is that many learned and unlearned persons of our day, never form a resolve or venture a remark without first *shooting* a boxful of dust into their noses. Listen.

In the account of Haytian Mythology, drawn up by a friar, named Roman Pane, who accompanied the "great adventurer" in his second voyage, in 1794, it is related, that one Caracola, who existed before the creation of the sea, went into a house begging some bread; "but the master of the house clapped his hand on his nose, and threw on him a guangaio of *Cogioba*, which he had made that day, and is a sort of powder they take sometimes to purge themselves.† This they take through a cane, half a cubit long, one end whereof they put to their nose, and the other end to the powder, and so snuff it up, which purges them very much."‡ They used this powder also very frequently for the solution of all questions regarding their national affairs, such as, whether they should declare for, or desist from war; and also as a mode of divination regarding a season of plenty or of scarcity: their chief being made drunk with the *Cogioba*, snuffed up his nose, by which

* Life, by his son, Don Ferdinand.

† Notwithstanding this decisive proof of the antiquity of snuff-taking, we find several French writers intent on assigning to it a much more recent origin. For example, Merat, in his "Dictionnaire Universelle de Matiere Medicale," declares "la prise" to be "*tout Européen*!" and the writer of the article "Tabac," in the "Dictionnaire des Sciences Naturelles," observes, that "il paroit que l'usage de l'introduire en poudre dans le nez étoit alors inconnu, et qu'il le fut même encore quelque temps après son introduction en Europe."

‡ The history of this Caracola is interesting, since it is the first instance related of a transatlantic mother bringing forth four at a birth; and more especially as shewing the antiquity of what is commonly called the Cæsarian Section; "for the said woman," says Roman Pane, "dying in labour, they cut her open, and took out the said sons."

means "the houses appeared to him to turn topsy-turvy, and the men to go upon their heads," and afterwards declaring the oracles which he pretends to have received from his Cemies, (or idols,) during the state of intoxication.

These Haytians made the most of their snuff, and afforded a hint that some modern physicians would seem to have taken.

"The Haytian doctor is obliged to be dieted as the sick man is, and so look like him, which is done thus,—He is to purge himself as the sick man does, which is done by snuffing a certain powder called Cohoba up his nose, which makes him drunk, that he knows not what he does, and so says many extravagant things, which they affirm is talking with the Cemies, and that they tell them how the sickness came."

So excellent an idea might be worked out by our clever medical Chevaliers d' Industrie. Dr. Dickson, the ci-devant fallacy man of Cheltenham, should look to this. It might form the basis of his new system. What an immensity of good a bushel of "Irish blackguard" would do the doctor. We dare say, however, he has plenty of it.

Perhaps some of our readers may suppose that *chewing* is, at all events, an European refinement. Not a bit of it. We have been forestalled by the Americans. On the 17th of October, 1502, at the bay of Caravaro, on the coast of Paraguay, the inhabitants, on the approach of the Spaniards, came down beating drums, throwing the salt water towards the Christians—*chewing herbs, and spurning it towards them.*

We have seen the Aborigines of America fumigating themselves, snuffing, and last, not least, chewing the glorious weed. To them must be ascribed the merit of first smoking it, and *pipes* appear upon the scene. Nay such was the genius of that tobacco-loving race that they had invented the cigar!

"The first particular account of the mode in which the herb was smoked, is contained in the second edition of the 'La Historia general y natural de las Indias Occidentales,' published at Salamanca in 1535, by Oviedo. This author mentions, that the principal men in Hispaniola have little hollow sticks, of the shape of the letter Y, the two superior extremities of which they insert into their nostrils, and the single inferior one they hold over the burning leaves. To this instrument, he says, the natives give the appellation *Tabaco*, from which the term at present in use for the plant is obviously derived.* The pipe, however, seems in a short time to have become less universal, or even in some degree obsolete, as in the account of Hispaniola, in 1541, by Hyeronimus Benzoni, we learn, that the inhabitants, after drying the herb, enclosed several leaves in one of maize, and having applied a light at one end, drew the smoke into their mouth by the other, and so fond did they appear to be of the state induced by this practice, that there were many 'qui adeo avide et furenter eum (scilicet Tabaco

* "Here, again, we find Merat at fault; he supporting the exploded notion, that the Spaniards designated the herb tobacco, from *Tabaco*, a town of New Spain, where they first saw it. (Dict. des Sc. Med. art. *Tabac*.) And Burnet, although assigning the proper derivation, fails in drawing his information from the fountain head, observing, that 'the specific name *Tabacum* is not, as was long supposed, a slight corruption of *Tobago*, or *Tobasco*, whence the drug is brought, but is, as Humboldt has shown, the Haytian word for the pipe.'—*Outlines of Botany*, vol. ii.

cum,) hauriant, ut tanquam exanimis in terram concidant ibique maximam diem partem aut noctis velut stupefactis sensibus et capti mente jaceant.' And Lery relates, that (in Brazil, in S. Lat. $22\frac{1}{2}^{\circ}$;) the natives used merely a large tobacco leaf to involve several smaller ones: and thus as far as we can discover, was formed, for the first time, that pest of modern society—the cigar.* 10.

Adieu, then, to all hope of originality in Europe. We have been anticipated on every side, and, humiliating as is the reflection, we are reduced, after all, to smoke or snuff, to chew, and spit as our master, the Red Indian, did some three hundred years ago.

Importation of Tobacco into Europe.—We are naturally curious about this great event. The change of a dynasty sinks into insignificance beside it. There is no doubt that to Spain or Portugal belongs the honour of having first received the precious consignment. The first authentic account of its arrival, places that about the year 1558, when it was brought by a physician named Francisco Hernandez, who had been travelling for several years in Mexico. In the following year, Jean Nicot, Lord of Villemaine, on being sent as French Ambassador to Portugal, was presented with some of the herb, which by experiment he found was salutary in several diseases,—indeed, it was to an accidental application of the fresh juice to a tetter on the cheek, that his attention is said to have been first directed to the plant. After treating with success several of the inhabitants of Lisbon, who seem previously not to have been well aware of its properties, Nicot, in the year 1561, sent presents of some of it to Catherine de Medici—to the Grand Prior, and to several people of rank in France.

It is on this account that the herb has been called *Nicotiane*—*Herbe a l'Ambassadeur*—*Herbe à la Reine*—*Herbe du Grand Prieur*. Dr. Cleland entertains a very low opinion of French accuracy and French industry. In a note he observes that—"the French writers seem to be equally ignorant of the history of their own country and of ours. For example: Merat, (Dict. des Sc. Med. l. c.) after mentioning the importation by Nicot, in 1661, continues, 'mais il paroît que François Drak fameux amiral Anglois qui conquist la Virginie,'—had made it known in England before the period at which it was brought into France,—a circumstance rather astonishing, when it is recollected that at that very day Drake was a sailor in a coasting vessel betwixt England and Ireland, and that he had then only attained his fifteenth year."

In Europe, so ignorant were men that they actually looked on immortal tobacco as only fit for a medicine! Snuffing came first into vogue on account of having been employed as a sternutatory in some ophthalmic disorder, with which Charles IX. was affected; but it does not appear to have advanced with very rapid strides, until two reigns afterwards, viz. under that of Louis XIII, when it attained an almost universal employment. In France, smoking was much longer of being introduced, and at first it was through long straws, terminated by a little chafing dish of silver. Singular to re-

* "The Indian females, who suffered from attacks of Hysteria, were in the habit of carrying about with them little horns made of palm or cane, suspended from the neck, through which they inhaled, when attacked, the fumes of tobacco. *Ephem. Med. Phys. Acad. Germ. D. ii, A. ii. Obs. 161.*"

late, the French have always regarded chewing as a barbarous practice. What an amount of rational enjoyment that lively people must have lost.

Perhaps nothing can, or ought to interest us more, than the epoch of tobacco reaching England. It is generally believed that this was in the year 1586, when it was brought to this country by some voyagers who had returned from a residence in Virginia; or, as that country was originally designated, Wingandacoa. Although, however, the majority of writers agree about the date, still there has arisen much disputation regarding the individual to whom should be assigned the title of introducer; and by different writers we find the claims of Raleigh, Lane, Drake, Greenville, and Harriot, respectively supported. Now it seems that Sir Walter Raleigh's second "adventure" to Virginia set sail on the 9th of April, 1585, and along with it Sir Walter sent Mr. Thomas Harriot, "a learned author and famous mathematician," as historian of the countries which the mariners might visit. This duty, accordingly, when he returned to England, in the following year, he set about performing; and in a short time afterwards published a work on the customs of the inhabitants of Virginia, and on the advantages which might be derived by cultivation of the country. In this work we observe the first mention of clay pipes for inhaling the smoke of tobacco; and in a plate which is subjoined in another part of the collection of De Bry, their form very nearly resembles that of those at present in use. Harriot enlarges much on the virtues of this herb; concluding his eulogium with the remark, that, those who employ it are not only freed from all kinds of obstructions in the system, but are, in addition, cured of those which they might chance to have, even though the complaint be of long standing." Master Harriot would seem, however, to have taken a spite towards tobacco subsequently, for in his Journal, quoted by Knickerbocker, he says of the Susquehanocks—"Their tobacco pipes were three quarters of a yard long, carved at the great end with a bird, beare, or other device, sufficient to beat out the brains of a horse! (and how many asses brains are beaten out, or rather men's brains smoked out, and asses brains haled in by our lesser pipes at home!)" Very unmannerly language Master Harriot.

But Dr. Cleland feels disposed to place the precise period of the introduction into England betwixt the year 1563 and 1568, principally from the fact, that Sir John Hawkins, afterwards Treasurer of the Navy, returned during that period from several voyages during the course of which he had landed both on the coasts of Africa and Hispaniola, and whose scrutinizing observation it is very astonishing such a novelty should have escaped. And in confirmation of, or rather, as corroborated by this circumstance, is the express statement which the Water Poet, in one of his numerous productions makes; that to Sir John belonged the honour of making Britons acquainted with tobacco.

Whenever introduced, Sir Walter's influence, his precept and example too, helped smoking on a pace. And perhaps the Virgin Queen took her social pipe with the great ladies of her court, or, at all events with some of the numerous "fancy men," with whom that chaste dame disported. Whether Elizabeth smoked or chewed (and her black teeth were the admiration of some curious foreigners), in about ten years after its importation into England smoking was all the rage. Ben Jonson and Bishop Hall declaim against it handsomely.

Ben Jonson is particularly hard upon the smokers, though at his club, which met in the Apollo room at the Old Devil Tavern, there is reason to believe that the choice spirits did not disdain to "blow a cloud." And if surly Ben did wage war upon the weed, it had its patrons notwithstanding. The smart gallants—the "young England" of that day—

Quaffed a whole tunnell of tobacco smoke,

the doctors patronised it, as we see from Nash's "Lenten Stuffe," published in 1599:—"Physicians deafen our ears with the honorificabilitudinitatis of their heavenly panacea—their sovereign guaiacum—their clysters—their treacles—their mithridates, compacted of forty several poisons—their bitter rhubarb and torturing stibium. Amongst our English harmonious Calinos, one writes passing enamoredly of the nature of white meats; a seventh sets a tobacco pipe instead of a trumpet to his mouth, and of that divine drug proclaimeth miracles," and academies were even formed for teaching the taking of tobacco. In the play of Every Man Out of his Humour, a placard is represented on the wall of St. Paul's aisle, having the following contents:—"If this city, or the suburbs of the same, do afford any young gentleman of the first, second, or third head, more or less, whose friends are but lately deceased, and whose lands are but new come into his hand, that, to be as exactly qualified as the best of our ordinary gallants are, is affected to entertain the most gentlemanlike use of tobacco; as first, to give it the most exquisite perfume, then to know all the delicate sweet forms for the assumption of it, as also the rare corollary and practice of the Cuban ebolition, Euripus and Whiffe, which he shall receive or take in here at London, and evaporate at Uxbridge, or farther, if it please him. If there be any such generous spirit, that is truly enamoured of these good faculties, may it please him but by a note of his hand, to specify the place or ordinary where he uses to eat and lie, and most sweet attendance with tobacco and pipes of the best sort, shall be ministered. Stet, quæso, candide Lector." While Cavalier Shift declares, "It pleases the world, as I am her excellent tabaconist, to give me the style of Signior Whiffe. I do more than profess, sir, and if you please to be a practitioner, I will undertake in one fortnight to bring you that you shall take it plausibly in any ordinary, theatre, or the tilt-yard."

In those golden days there was none of that affectation of horror at tobacco, which our modern misses think so pretty. Then a man wooed and won with it, and his courtship was then literally, as it is now substantially, smoke.

Thus Fastidious Brisk, when paying his addresses to Saviolina, puffs out "Tobacco's smokie mists," in the interval of his high wrought speeches; and Sogliardo, about to court a lady, remarks to Macilente, "Faith an' you but say the word, I'll begin to her in tobacco." When tobacco was in such esteem

In prince's court and lady's bower,

we need not be surprised that a monopoly was granted for the manufacture of tobacco pipes.

But hard times were at hand. Elizabeth was succeeded by the pedantic James who was no lover of smoking, and exorcised it as heartily as he did witchcraft. The kingly clerk blew his counter blast to tobacco, and blew it hard. Rip Van Winkle never smoked more lustily than puffed the anti-smoking monarch, who enumerates thus the ills that spring from the "rich

Indian vapour":—its serving as an incentive to drinking and lust,—its rendering the people so effeminate as to be unable to defend the kingdom,—its expensive character, ruining families,—its being disagreeable to associates, so that 'people of judgment' are obliged to begin it in self-defence,—and, lastly, its being inhaled into the brain, and so covering the surface with a black crust of soot." This latter assertion is rather startling, it is true, yet something may be said for it when we see the sable stream distilling from a veteran nose, and when we learn that James gives an account of the brains of individuals who had, during life, been excessive smokers, having been found, after death, covered with a black matter, which was very naturally presumed to be the remains of the volatilised tobacco. Much as this observation redounds both to the royal sense and veracity, James has not the exclusive credit of it, for Hoffman says, that the heads of some executed criminals (who had been great snuffers,) being dissected, the *patera* of the brain was black with snuff; and he was informed that the heads of the English soldiers who were killed in the Bohemian war, all who snuffed, had their brain in that condition. Unhappy men of snuff, when king and doctor manufactured such enormous lies against you.

James visited tobacco with something almost as heavy as the *counterblaste*, a tax of six shillings and eight pence. This was the unkindest cut of all.

At the primary introduction of tobacco into Great Britain, and for some time afterwards, no commercialist seems to have exclusively devoted himself to the vending of this herb; supplies of it being in general obtained from the grocers.

"In process of time, the sale of it devolved upon the apothecary; and, at a still later period, it became an article of profit to the tavern keeper. In the year 1610, however, when the *Alchemist* was published, we find that *honest Abel's* shop was exclusively a divan where, as *Face* declares, he keeps his tobacco—

'In fine lily pots that, open'd,
Smell like conserve of roses, or French beans,—
He has his maple block, his silver tongs,
Winchester pipes, and fires of juniper.'

But, notwithstanding the increase in the amount necessary to procure tobacco, the demand for it, although for a short time somewhat diminished, appears soon to have returned to its former extent, or even to have surpassed it. For example, in the '*Devil is an Ass*,' 'carmen' are said to have 'got into the yellow starch, and chimney-sweepers to their tobacco and strong waters.'

There is nothing new under the sun, and if we see now-a-days a dustman take his cheroot, he does little more than generations of dustmen did before he was born. It seems that the heads of three of the four great divisions of religionists have anathematised the weed. The Pope and the Puritan have damned it alike, and with almost equal cordiality, and in their violence they have supported the clerical character. Zachary Boyd excludes the smoker from Heaven, and another preacher says:—"the people cannot wait until the smoke of the infernal regions surrounds them, but encompass themselves with smoke of their own accord, and drink a poison which God made black that it might bear the devil's colour." And what do our readers think this infernal mixture may be?—Coffee! Hear this, ye temperance-men—rejoice, publicans—tobacco and coffee are damned together.

Tant de fiel entre t'il dans l'ame des devots?

But there are kindlier feelings afloat towards the maligned herb. The author of a "Paper of Tobacco," takes a fairer view of its deserts, and does something like justice to its powers. He informs us that the greater facility with which the Scotch acquire the French language than the inhabitants of England, is "undoubtedly to be ascribed" to the nasal twang which, in his opinion, is imparted by the use of snuff; a statement which completely puts in the shade every educational scheme or mode from the days of Adam to those of Pestalozzi.

"In many cases of religious melancholy, where long prayers are ineffectual, great relief," it is remarked, "may often be expected from a *short pipe*. The value of tobacco at lyk-wakes is well known in every part of the United Kingdom. It *blunts the edge of grief*, and by inducing kindly feelings, causes the neighbours and friends of the deceased to *forget his faults and to enlarge upon his good qualities*." This is handsome. And indeed it is only fair to the church to confess that if some of its members have been virulent, the great majority have been rather of Parson Adams' way of thinking, and have looked upon their pipes as comfortable things. This is rightly taken notice of in a reply to a supposed appeal by the chaplains of the kingdom to Parliament, wherein

" Besides store of dishes—
One part of their wishes—
To fortify maw sacerdotal,
Eleemosinary Funk,
And leave to be drunk,
They humbly desire you to vote all,"

it is declared, that, "as to the chaplains, we are willing to allow them plenty of meat, drink, and tobacco, the most zealous part of their supplication."

Our author entertains the interesting question whether a *quid* or a *pinch* was first patronised in England. The Duke of Albemarle (Monk) certainly took his quid. Pepys notices this. "Sir William Coventry," observes this quaint chronicler of *ladies' patches* and *exceeding base dinners*, "spoke slighting of the Duke of Albemarle, saying, when De Ruyter came to give him a broadside, says he, (*chewing of tobacco the while*,) will this fellow come and give me two broadsides and then he will run." And the custom was so general among the English as to induce a German of the name of Junker, to entitle a book which he wrote, "*Dissertatio de masticatione Tabaci (of schawing Tobacco) in Anglia usitatd.*"

But, in good Queen Anne's reign, snuff took the lead. Even the ladies adored it, the box being as necessary an article of the fashionable toilet as the oil of talc, or the ceruse pot; and the present of a *tabatiere* being universally looked upon as a tender of affection.*

We need not pursue the introduction of the precious herb into other countries, nor dilate on the just sense of its merits which the German and the

* "LORD FOPPINGTON.—Lady Betty was just upon the wing; but I caught her by the *snuff-box*, and she pretends to stay to see if I will give it her or no.

LORD MORELOVE.—Death! 'tis that I gave her, and the only present she would ever receive from me."—*The Careless Husband*,—Act iii. Scene ii., 1700.

Hollander evince. Whoever has had the good fortune to ride inside a German or a Belgian diligence, must recollect the fragrant scent from yesterday's tobacco and to-day's; and he must deprecate the squeamishness which in this country interferes with men smoking at all times, in all places, and in every company.

Nor need we pursue the ungrateful task of chronicling the unsuccessful attempts that have at different times and in different countries been made to put it down. Men without souls for a cheerful pipe have preached crusades against it, and by fine, and imprisonment, and even death, have waged a cruel war with smoke. Smoke, however, has vanquished them, and rises triumphant while its opponents are laid low. In vain has the lawyer, in vain has the divine attempted its overthrow in our happy island—by a signal retribution ignominy has covered the memory of the kingly blower of the *counterblaste*—and we stand pre-eminent among the nations as a snuffing, a chewing, and a smoking race. Happy England, "great, glorious, and free," in whose metropolis the learned Pigot, he of the Directory, informs us there are 1,200 venders of tobacco, and only 2,200 bakers. Verily if John Bull deems bread the staff of life, he looks upon tobacco as the joy of it.

Analysis of Tobacco.—This must necessarily attract a high degree of interest. We need not be surprised at the contradictory statements of various chemists, for every one who knows anything of the history of organic chemistry is aware of the discrepancies that obtain in it. We therefore take the last analysis, as, of course, the least contradicted—the analysis of MM. Henri and Boutron Charlard. They, in 1836, by distilling *Tabac à fumee* twice off caustic soda, and by placing the product, of a syrupy consistence, in a vacuum, obtained a substance bearing a considerable resemblance to chlorate of potass, and which they designated *Nicotine*. This alkaloid has no odour when cold, but when heat is applied it evaporates completely away, being transformed into a white irritating smoke, having a smell like that of tobacco, and even when much diluted, the taste is very harsh, acrid, and caustic. It is soluble in ether, alcohol, turpentine, water, and weak acids. It forms salts with acids, which are decomposed partially, even at a moderate temperature. Caustic soda causes nicotine to give off ammonia, and by the *strong* mineral acids it is completely destroyed. As it contains more than twice the quantity of azote which quinine does, it must be considered a very powerful base.

As tannin forms a very insoluble salt with nicotine, astringent substances are pointed out as the proper agents to be had recourse to, when a case of poisoning by means of this occurs.

This substance is exceedingly poisonous, being only inferior in point of rapidity to arseniетted hydrogen. On a drop of the solution being introduced into the beak of a strong pigeon, *la foudroye instantanément*, and small birds were killed in a moment merely by being brought near a tube impregnated with it. Henri having through inadvertence drawn into the mouth, for a second or two, an exceedingly weak solution of nicotine "experienced a violent stunning sensation, (etourdissiment) to which succeeded a sense of weight, pain, and oppression in the head, continuing for several hours." It is this substance which is the real cause of the poisonous effects so often mentioned by old writers, as caused by the *oil* of tobacco.

Action of Tobacco.—It was soon found to be, in the main, a *sedative*. Lord Bacon considered the powerful consequences to depend upon a *condensation* of the spirits, without however alluding to any previous *abnormal expansion*. But perhaps we ought mostly to admire Willis's notion of the spirits being driven back by tobacco from the centre to the cortex of the brain, like a defeated army in consternation, whereby the soul being more contracted, retiring into itself lies down in rest, just almost in the same manner as throwing water upon a fire that breaks vehemently out *immediately* beats down the aspiring flame.

Be this as it may, the following are the effects of tobacco. On the reception of a moderate dose, the secretions are for the most part increased, especially the mucous surfaces of the intestinal and urinary organs, and even the skin is to a small extent interested. These phenomena are gradually increased in intensity on a larger quantity of the medicine being administered, until diarrhoea and vomiting, accompanied with nausea, relaxation of the muscular fibre, tottering of the limbs, and very great depression of strength supervene. The pulse during this stage is very small, weak, and even intermitting; the face is blanched and contracted, frequently bathed in cold perspiration, while at the same time, the mind is in a very depressed condition, and frequently complete syncope winds up the train of symptoms. In the third stage of symptoms caused by tobacco, viz. that of poisoning, the breathing becomes very difficult, the limbs are alternately convulsed and paralysed, the muscles of the neck frequently affected with tetanic spasm; the pulse becomes weak, slow, and fluttering; the pupil is contracted and insensible; a universal rigour prevails in every part; and the patient is in general cut off during the existence of a paroxysm.

Short, however, of this, ill-natured persons say that tobacco spoils digestion. Every body knows that a quid is a cheap meal, and some who smoke are not much the hungrier for it. Old smokers, we have observed, are no great eaters, labour under dyspepsia, and are apt to have scaly eruptions on the skin. The effect on the appetite has long been known, and even embodied in verse:—

"All dainty meats I do defy,
Which feed men fat as swine,
He is a frugal man indeed,
That on a leaf can dine.
He needs no napkin for his hand,
His finger ends to wipe,
That keeps his kitchen in a box,
And roast meat in a pipe."

Sanatory Effects of Tobacco.—Our forefathers set a great value on them, and with reason. For, "in the first place," says Chrysostom Magnenus, "the manner in which the flowers adhere to the head of the plant indicates the *Infundibulum Cerebri* and *Pituitary Gland*. In the next place, the three membranes of which its leaves are composed announce their value to the stomach, which has three membranes."

Dr. Cleland observes that as the maladies for the alleviation of which it has been recommended and administered embrace those contained in almost every genus, order, and class of Cullen, we cannot do better than subjoin the nosology. After this it would be superfluous to go on. From toothache to tetanus, and from Chrysostom Magnenus to Dr. O'Beirne is a jump wide enough in all conscience, at all events enough for us. And so we conclude, wishing all good to the "weed," plenty of it to our readers, Havannahs of the finest quality to Dr. Cleland, and Theses as entertaining and as instructive withal from every candidate for the Doctor's degree in the University of Glasgow.

MEDICAL RELIEF OF THE SICK POOR IN ROME AND PRUSSIA.

I. REMINISCENCES OF ROME: or, a Religious, Moral, and Literary View of the Eternal City, in a Series of Letters addressed to a Friend in England, by a Member of the Arcadian Academy. London, 1838, pp. 298.

II. REGLEMENT FÜR DIE STADT-ARMEN KRANKENPFLEGE DER HIESIGEN COMMUN, &c. Berlin, 1823.

Rules for taking care of the Town's Sick-poor, &c.

III. SUMMERISCHE UEBERICHT DER IM JAHR 1838, IM KÖNIGLICHEN. CHARITE-KRANKENHAUSE VERPFLEGTEN KRANKEN, NEBST EIVEM UEBERRICK DER BERANDERUNGEN DIESER AUSTALT IN DEM LETZTEN DECEMNIO. Berlin, 1839.

A Summary Account of the Patients who were treated in the Charity Infirmary during the Year 1838; and a Statement of the Alterations which have taken place in that Establishment in the course of the last ten years.

In the present article it will be our endeavour to present a complete view of the provisions for the relief of the sick-poor, in the principal capital of Christian Europe, "where every stone is a book—every inscription a lesson—and every ante-chamber an academy;" and in the chief kingdom of Protestant Germany, the paternal character of whose king, and the mild despotism of whose government, appear to have been mainly exercised in improving the social condition of the people at large.

Travellers and tourists even of the medical profession, when they visit Rome, visit her as "the ancient emporium of art and science," and view her only under the appearance of "a time-worn and decrepit matron sitting disconsolate amid the tombs of her departed heroes—her sages—and her saints." And when they visit Germany, it would seem as though they did so merely to reverberate the echoes of other men's admiration and wonder, who had gone before, and already surveyed the grandeur of her hills, and the magnificence of her rivers.

Heroes, and sages, and saints, even in this the 19th century, when intellect is said to be "on the march," are still exceptions to the average stature of mankind considered in relation to the prowess, the wisdom, and the goodness of the mass of working, walking, and talking human beings. Of Howards and Frys we are only permitted to see one in an age. And to this cause it is perhaps owing that we may search through more than a hundred volumes of tours on the Continent, and travels in Italy and Germany, without being able to glean any satisfactory particulars respecting the poor of those countries, and especially the sick-poor.

From a Roman Catholic priest in our neighbourhood we have received, in the volume which stands at the head of this article, a pleasing exception to the general rule, as respects the "Eternal City;" while a Protestant gentleman of the legal profession has transmitted us the regulations for taking care of the town's sick-poor, and the excellent report by Rust of the Royal Infirmary of the Charité at Berlin. And by means of these we proceed to make our readers acquainted with a feature in the civil aspect of two very differently constituted States, with which travellers and tourists in general have failed to render either the public or themselves familiar. And, we choose the present time for doing so, on account of the pending discussion in Parliament of the great question of Medical Relief to the Sick Poor—a question which will only then be settled when the basis of any provision for rendering that relief satisfactory to the medical profession and to the poor, shall be one of justice to the former—and mercy to the latter.

I. We begin with *ROME*. One of the officers of the Papal household is called "l'Avvocato de Poveri." The almoner, generally an archbishop (in partibus) is another officer at the Pontifical Court. The chief business of the former is to watch over the interests of the imprisoned—of the latter, to provide for the necessities of the indigent poor.

Medical assistance and medicaments are gratuitously provided out of the Papal Almonry, "for bashful paupers, who are ashamed to apply to the public hospitals for relief. The almoner, who keeps a list of this class of persons, appoints deputies to see them properly attended at their own homes." And, for the better distribution of the relief thus provided, eleven clergymen, eleven physicians, eleven surgeons, eleven chemists, and two druggists are selected, and employed in the different wards of the city.

It is calculated that, in almonry, the Pope bestows annually not less than 50,000 crowns; which sum, though considerable, does not amount to the half of what his almoner had to dispose of prior to the French Revolution. "The other public institutions of charity in Rome, have also revenues to the amount of 764,000 crowns a year!"—*Reminiscences of Rome*, p. 179.

The *public hospitals*, considering the comparatively small population of the city, estimated at about 160,000 inhabitants, are indeed magnificent, but their magnificence, like the dome of St. Peter contrasted with the surrounding buildings, is utterly disproportionate to the extent of the city, or its populousness. For example, the Hospital of San Spirito, for males alone, is capable of containing 3,000 beds; and its annual average of inmates is about 12,000. The hospital for females, again, Archiospedale del Santissimo Salvatore, contains 600 beds, and admits annually about 3000 patients. The surgical hospital, for the reception exclusively of accidents, receives 900 patients annually. The hospital of incurables contains 350 beds; and the annual average of patients is not less than 2000. The number of convalescents annually received into the hospital of the Holy Trinity, from other institutions, for the furtherance of their recovery, amounts to 15,000. The hospital for cutaneous diseases contains 200 beds, and receives upon an average 400 patients in the year. The fever hospital has 80 beds, the number of its annual inmates is not stated, although, from so fruitful a source as the Pontine Marshes, we may be sure it is constantly filled; and from the limited duration of most cases of fever, we may be also certain that its tenants in the course of the year will be altogether out of

proportion to the size of its dormitories, or the number of its beds. The lying-in hospital, during ten years, has received nearly 2000 pregnant women. And, in the Roman lunatic asylum, there are accommodations for 400 patients, and the number of admissions annually amounts to 100.

Taking the sum of the foregoing particulars, it will be seen that, in Rome, with a population of 160,000, and without enumerating 18 minor hospitals for poor sick foreigners, there is hospital accommodation for the sick, the hurt, and the scabbed, the convalescent, the incurable, the lying-in, and the lunatic, to the amount of not less than 5000 beds; and, there are actually accommodated upwards of 34,000 patients. This exhibits certainly a frightful extent of bodily suffering in so small a community, but displays also, in favourable contrast, an immense expenditure of human beneficence to alleviate that suffering.

The proportionate mortality in the various institutions differs very greatly; Morichini (degli'Istituti di Carità) calculated the number of inmates in the Hospital of St. Spirito at 12,000, and the mortality at from seven to twenty per cent. "During the year 1832, according to the official register, of 15,524 patients admitted, only 1246 died in the hospital!"—*Reminiscences of Rome*, p. 183.

In the hospital del Santissimo Salvatore, 12 per cent. is the average ratio of mortality. In the surgical hospital, the member of the Arcadian Academy tells us that "not more than five per cent." of the patients annually admitted, "succumb under treatment"—which expression, we presume, implies, that this is the proportion of cases which prove fatal.

In the Hospital of St. Giacomo, for incurable invalids, about 200, or 10 per cent., die annually.

In the Hospital of St. Gallicano, for diseases of the skin, 30 deaths out of 400 patients is the calculation.

We have no data before us from which to fix the ratio of mortality in the hospital cases of fever.

Of 2000 lying-in women, delivered in the St. Rocco Hospital, not more than 12 died in childbed, although, according to Morichini's calculations, instrumental assistance was employed in the ratio of five per cent. of the whole number of deliveries.

A third part of the insane are reported to recover—the number that die are not stated.

The *medical administration* of the hospitals above enumerated may be understood from an attentive consideration of the following particulars:—The Hospital of San Spirito has twelve physicians, six of whom are assistants or "sostituti" only, and four surgeons, with 100 resident servants. To the hospital "del Santissimo Salvatore," four physicians and three surgeons, with assistants, are attached—"the ordinary operations of surgery, such as bleeding, &c. are performed by the resident nuns themselves." 190.

To the surgical hospital there are four surgeons and two physicians. To the hospital for cutaneous diseases, three physicians and three surgeons, with about 40 other attendants. The hospital for incurable invalids has four physicians and four surgeons. With the exception of one extra physician, the entire service of the hospital for fever patients is performed by the confraternity or religious order, known as the Fate Ben Fratelli, or Do-good Brethren, "who attend the sick confided to their care night and

day, ministering to their spiritual and temporal wants with the utmost solicitude and attention." 197.

The *revenues and æconomic management* of the foregoing institutions are confided for the most part to the clergy, and are generally ample. The revenues of St. Spirito considerably exceed 100,000 crowns per annum—it was given in charge by Pope Innocent III. to a religious order of Hospitaliers, founded in France, by Guy de Montpellier, as the order of the Holy Ghost. The revenues of the Hospital del Santissimo Salvatore amount to 32,000 crowns a year, and are administered by a lay and ecclesiastical committee, with one of the cardinals for president. Those of S. Maria della Consolazione, (for accidents,) and amounting to 12,000 crowns, are managed by a special committee, appointed by the Papal Government. A committee, composed of two ecclesiastical dignitaries and a lay gentleman appointed by the Pope, act as trustees for the administration of the revenues (of the Hospital of St. Giacomo) amounting to about 30,000 crowns per annum. The Trinity, or Convalescent and Pilgrim Hospital, is endowed with property to the value of 18,000 crowns a year—and the Government contributes to the hospital for the maintenance of each invalid soldier, fourteen bajocchi, or halfpence, per diem. The funds are managed by trustees, appointed by the arch-confraternity, "Della S. S. Trinità de Pellegrini, e Convalescenti." The lying-in hospital was endowed by Cardinal Salviati, with a revenue of 2,500 crowns per annum. The lunatic asylum has an annual revenue of 12,000 crowns, two-thirds of which are furnished by the State. The Pope's exchequer also defrays the expences, 12,000 crowns per annum, of the institution for patients with cutaneous disorders. His chancellor appoints the committee of management in this instance. The lunatic asylum is superintended by a lay and ecclesiastical committee, under the presidentship of the Commendatore di S. Spirito—a prelate of the first rank in the Roman Court. The gross revenue of the whole, not including that of the fever hospital, amounts to 228,500 crowns per annum.

It is no part of our business as medical reviewers to meddle with the religious opinions of men, or to discuss different modes of faith—but we may observe here, that, to the predominance of religious habits and feelings in the Roman community may be traced one of the most pleasing, if not the most pleasing feature of their system of administering medical relief to the sick poor, we mean the substitution of voluntary for hired nurses, and the very ample, and, to our Protestant eyes, excessive provision for their spiritual wants.

In the large hospital for females, and in the female department of that for incurables, a community of female hospitaliers, introduced from Genoa in imitation of the French Sisters of Charity, attend to the sick as nurses, and themselves bleed and perform all the minor operations of surgery. In that for incurables, St. Camillus, in 1584, founded his order, the members of which have the spiritual direction of it still. This order, distinguished from the other clergy by a red cross worn on the upper part of their black mantles, and known as the "Chierici, Regolari Ministri degli' Infermi," "are obliged by vow to attend upon the sick at their own homes, when sent for, even during plague, or any other contagious disease."

The reflections of the author of *Reminiscences of Rome* upon this part of

our subject, although not new, are nevertheless true, and being true, deserve the serious consideration of those to whom is confided the solemn duty of legislating for the more effectual administration of medical and other relief to the sick poor of our own country. We entirely agree with him that—"It would be highly advantageous to the poor in our own, and, in fact, in every country, if hospitals were generally confided to the care of such administrators and attendants as the 'Fate Ben Fratelli' in Italy, or, as the 'Sœurs de la Charité' in France, who certainly make the best nurses, combining, as they do, more intelligence and a higher sense of duty than is usually found among uneducated and hired servants. It is not merely the nauseous medicine doled out from the dispensary, or the scanty pittance of weak broths and coarse meats, served up with the harsh accompaniments and cold formality of English parochial and workhouse discipline, which the sick or the dying patients require from their attendants; for the kindly look and devout consolation, excited by a feeling of religious sympathy, are more refreshing to the aridity of the languid frame, than a cooling draught is to the parched tongue."

There is yet one thing more which we must notice, and notice with commendation, at the same time that we express our astonishment at the total absence of every thing like it in the capitals of our own country. We refer to the subservience of the medical institutions of Rome to the improvement of medical students, by the existence of numerous scholarships.

About fifty medical and surgical students are boarded and lodged in the Hospital of San Spirito. In that of S. Maria della Consolazione, ten surgical students are so boarded and lodged. Fifteen medical students are maintained on the establishment of St. Giacomo. Throughout the United Kingdom of Great Britain and Ireland there is no such provision for deserving students. The wealthy, indeed, may become residents in scant numbers, but only upon payment of a sum adequate to their board and lodging elsewhere.

Before taking our leave of the Ancient City, we would mention a curious custom which still holds there; and place on permanent record a fact stated by the anonymous author of the *Reminiscences*, which, if true, deserves to be not only carefully cherished but widely circulated, as an anecdote of excellence in high places, not the less creditable to the party concerned, because a sovereign pontiff.

The bodies of those who die in San Spirito, "are not removed from their beds until two hours after death has ensued. They are then transported to the Mortuary Hall, where they are kept, previous to interment, for twenty-four hours. Every evening, as soon as the Ave-Maria bell rings, a charitable confraternity of laymen come processionally with lights, and a crucifix, to convey the deceased to the burial-ground, situate on the Tanculum. When it happens, as is frequently the case, that there are no dead to be interred, these pious penitents nevertheless, even in cold and stormy weather, make their usual pilgrimage to the hospital cemetery, reciting prayers for the faithful departed."

"Abuses, nevertheless, will sometimes creep into the best regulated establishments. A remarkable instance occurred to my recollection, in this vast hospital, under the pontificate of Leo XII. This pontiff, so noted for his vigilance over the conduct of his ministers, in every department of public administration, used to inquire into every disorder, and listen to every complaint. Suspecting

that all was not right at San Spirito, he, followed by a few confidential attendants in disguise, unexpectedly made his appearance at the hospital, about two hours after midnight, on the 25th of June, 1825. The Pope, while hastily examining the different wards, perceived that one of the poor patients was nearly at the point of death, without a single resident clergyman being in attendance, as in duty bound, at all hours of the day and night, to administer the sacraments to the dying. He, in consequence, immediately dispatched one of his own chaplains for the viaticum, and in the meantime placed himself alongside the dying man, to hear his confession, and to impart to him the consolations of religion. Ere long, the news of so unexpected a visitor's arrival had spread with the rapidity of lightning; and you may imagine, better than I can describe, the stir it made among the healthy and slumbering guardians of the hospital. The zealous pontiff, however, did not desist from his pious undertaking until he had comforted the departing soul with the bread of eternal life. He then quitted this receptacle of infirmities, accompanied by the prayers and blessings of the helpless patients, and the trepidation and astonishment of those whose negligence he had thus so flagrantly though tacitly rebuked."

"A medal was struck, (though not by the hospitallers,) as a memorial of this event, and a picture, representing the pope's nocturnal visit, may be seen in the Altieri Palace. The present nunzio at the court of Vienna was one of Leo 12th's attendants on the occasion."—*Reminiscences of Rome*, pp. 183-4-5.

II. Turning to the Medical Institutions for the relief of the Sick Poor in Prussia, we observe an inverted order of things. Instead of the State being there subservient to the Church, the Church in almost all things is rendered subservient to the State. And, accordingly, we may expect to find the glory of its institutions of mercy gathering round the civil, rather than the ecclesiastical establishments.

In Prussia, it is the recognized obligation of every parish to provide for its own poor, so far as its abilities and their wants can be said to correspond. Medical relief for the sick poor is implied in such provision, which devolves as a duty upon every commune, and is shared, in particular cases, by the Government, which represents the whole country.

There is, however, no general organization, of a separate and distinct character, for providing such relief, which can be termed national; or which is of uniform applicability throughout the country. Hence, while such relief is indeed afforded everywhere, it almost everywhere presents a varied and varying aspect according to the differences of locality, population, &c. And thus, while in cities the highest order of medical officers, physicians for the poor, is always to be met with; in most of the rural districts they are extremely rare; and only generally to be found in those of the richer, or Rhine provinces.

The medical system, as a whole, is subject to the Minister of Health, who, for convenience, is also minister of education, and ecclesiastical matters. He is assisted by two medical councils, one for contrivance, the other for execution; to either of which he applies according to the nature of the case. Under him are *all* medical men, and he exercises his control by each provincial government, who again employ functionaries to carry it out in the respective districts, by a general superintendence of medical matters. If the poor were to be neglected by the commune, it would be reminded of its duty, in Berlin—by the police; in the country—by the provincial government.

No medical man can practise at all in Prussia without a government

approbation in addition to a medical degree—and if a similar rule held in our own country, it would at once remove all the heart-burnings which vex and irritate the profession from one end of the United Kingdom to the other. Of course no medical man can fill the office of a poor's physician or surgeon without the double qualification.

In the Royal Domains, the *fiscus* lies under the same obligation to provide for the poor generally, and for the sick poor in particular, as any other proprietor. And such institutions as were of old endowed by the state, or serve a double purpose (as instruction,) are maintained by Government.

So far as the people at large are concerned, medical relief is, as has been already stated, more generally left to be provided according to the discretion of particular communes, than ensured by any governmental or national provision.

In the larger communes, accordingly, there are infirmaries, into which those only are received who cannot have proper nursing and attendance from their own families, or at their own lodgings. In the smaller, and especially the country, parishes, the authorities contrive to do without infirmaries, or contract for the maintenance of their sick at the adjacent city one. In some districts, again, the parishes, when too feeble, singly, to undertake the cost of such establishments, have united for the erection of district lazarettoes. When they possess the means—which, however, is rarely the case, except in the Rhine provinces, and in large cities, they are at liberty, but not under obligation, to appoint physicians for the poor.

In the principal cities, especially Berlin, there is, as a civic institution, a public and organized care of the sick poor. Here, also, associations of private individuals are in more or less active operation; but these are only indirectly or not at all connected with the public institution. The latter meets what law and necessity require, the former prepares a way for benevolence. In Berlin there is a poor's-rate for the sick, as well as for the healthy poor, and any inadequacy of this public fund to meet exigencies of an extraordinary kind is met by the liberality of voluntary contributors.

This public institution is known as "the Poor Direction," a board composed of professional men and others, and consisting, in Berlin, of the lord provost, the members of the magistracy, an equal number of town deputies elected by the citizens, and a number of physicians, many of whom belong to the Medical College. Where the field of their operations is divided, each division, or district, is subjected to a commission, or sub-direction. In Berlin, under the central board, there are not less than fifty-eight such commissions, each of which constitutes a small college with a president or manager, to whom the pauper has recourse, and who refers him to a doctor, if in need of one, with a written recommendation. In other cases, the pauper, when sick, sends for the "poor deputy," who ascertains whether the patient be able to pay for medical attendance and medicine, or not:—if not, he gives him a certificate to the poor physician or surgeon of the district, who is expected to see him as soon as possible. Except in cases of extremity, when he is competent to act alone—the deputy is assisted by the presence of a member of the commission; from which a report of each case is to be sent to the central board.

The recognized objects of gratuitous medical relief are—the poor. And, in the eye of the law, he is poor who possesses insufficient means, or inadequate strength to provide himself, and those belonging to him who are in-

capable of earning their own subsistence, with the mere necessities of life, as food—clothing—shelter, and fuel. He who is not poor in this sense, has no claim on the public for support, and belongs—if not to the rich—to that class of persons which is supposed to be beyond the pale of the poor-direction. When a man, legally poor, falls sick, the poor's physician of the district decides upon his case, and whether indeed he be sick at all or not; and, upon the judgment of the physician, the disposition of the higher administration, and the local and other family relations, the amount of the help to be afforded him depends. And thus the relations of the sick poor to the rest of the community regulate themselves, rather in a practical, than in an administrative, than in a theoretical or legal way. While every sick person for whose case the commissioner has decided relief to be necessary, is gratuitously attended and relieved accordingly, and while the circumstances enumerated above, assign the only limits to that relief; a commune is at liberty, if it sees fit, to go beyond the bounds of simple objection—there being no law to prohibit its passing out of the province of police into that of benevolence. The boundaries of medico-parochial relief are thus rendered difficult of discovery, and can only be rightly observed by an arbitrament not too profuse, in order that private benevolence intrude not too much into the poor's administration; else those who are without means, yet not reckoned as destitute poor, might be pampered and encouraged to demands which would exhaust the poor's funds, and involve the commune in inextricable difficulty. A drunkard, a spendthrift, or one who does not receive the medical officers with due respect, loses his right to medical aid, if his reform be hopeless.

The pauper lunatics are received into Provincial Asylums for cure, where cure is practicable; for custody and protection, when incurable; these asylums are under the sanction of the estates of the province, and are helped to be maintained by pecuniary assistance from Government. In most of the provinces there are institutions of the above description—and measures are in progress for supplying them to all. In the New Charité at Berlin there is an Insane Department. The Lunatic Asylum at Leyburg is the largest provincial one.

Poor lying-in women are provided with midwives, gratuitously, in every district. These district midwives are bound to the care of the poor, but not exclusively. They are selected from the midwives who have been educated at institutions for the purpose, partly supported by Government, and partly at the expense of the provinces, and undergo a strict examination. In the very smallest village there is always a midwife, who is obliged to render gratuitous aid, if necessary, to any poor woman unexpectedly taken in labour. But an application for such help should be sent in, in time, to the local authority, (in Berlin to the poor's commission,) which then provides a midwife in readiness—who is not, however, permitted to undertake any but natural labours; for where manual help is required, an accoucheur must be called in, who acts, in general, gratuitously, but only so at his own option. The physicians and surgeons are, generally, accoucheurs as well, and, therefore, can act as such, in the cases of the poor—but, in order to practise as accoucheurs it is necessary, in their cases, as well as in that of the mere midwives, that they should previously undergo an especial examination in obstetrics.

In the Berlin Charité every applicant in her ninth month of pregnancy is received impromptu in order to her confinement: and so, likewise, in the Royal Lying-in Institution attached to the University, if she be poor. In the provinces it is otherwise, no fixed rule obtaining, but the principle upon which all regulations are based, being, that the local authorities or commune must see that the pregnant as well as the sick and other poor are provided for. Midwives act commonly, but the parturient woman who has laid claim to public help, cannot decline male assistance. In the hospitals, on the contrary, the accouchements are either conducted solely by accoucheurs, or superintended by a professor of obstetrics when conducted by students learning midwifery, whether male or female. In Bonn, the poor administration pays medical men and midwives to attend: the midwives are all well-educated, and duly examined.

When the situation and circumstances of a sick or lying-in pauper are such as to require the presence of an attendant or nurse, the poor commission provides this also. But this is the exception—the rule being, that the sick and lying-in poor shall be attended and nursed by their own relatives; or, when solitary individuals, that they go into a hospital. The prejudice against hospitals of every kind is fast decreasing. Where nurses are provided at the public expense, they are not remunerated by a fixed salary, but according to place, work, and requisite qualifications. When the patients are transferred to hospitals, if unable to walk, they are conveyed thither free of expence, in a carriage kept for the purpose in every district; and for cases which might suffer by the motion, even of a carriage, sedan chairs and litters are provided.

The sick poor of Berlin have access to Russian baths, sulphur baths, and baths of different kinds, with herbs, &c. and even have them brought to their rooms when unable to leave them. When recommended by the poor's physician for removal to the Gailbrunn (watering place) they are sent there at the cost of the poor's administration, and provided with free board and lodging.

The necessary medicines are not furnished either by the government or the medical officer; but by the apothecaries, who, alone, have this privilege. The Prussian apothecary, however, can give no medical advice, but, nevertheless, his education is obliged to be of that thoroughly practical kind as to enable him to compound all the preparations he may be called upon to dispense. On the other hand, the physician and surgeon, whose prescriptions he is bound to "observe, execute, and preserve," as his vouchers for his termly charges to the Poor Commission, dare not dispense the medicines they prescribe. The quarterly accounts of the apothecary, proved by the receipts of the Poor's Physicians and Surgeons, are, after regular revision, according to the "medicine taxation," honored by the treasurer of the Poor's Direction.

Instruments, bandages, &c. are granted by the central board, on the attestation of the surgeon that they are needed—on receiving which attestation the "Bandagist" gives them out. Beds, cloaks, shirts, flannels, are in like manner at the command of the medical attendants for the use of their sick; and when so used by them a quarterly account is rendered to the Board.

In Berlin, it is the duty, moreover, of the respective Poor Commissions to carry out all recommendations of the medical officers, for facilitating the recovery of the sick poor; and, on their report, everything comprised under

the term "medical comforts" is unsparingly afforded. A restaurateur supplying the prescribed dietetic necessities, such as—beer, beef, soups, eggs, brandy, coffee, wine, &c. upon the presentation of tickets signed by the medical attendant.

In cases where the sick pauper is the head of a family, or its chief support, the wants of that family are attended to by the Poor Commission of the district within which it resides, which must take cognizance of the case, and either grant the family sufficient support at home, or remove its members into hospitals, workhouses, orphan houses, or the like, as they may judge expedient. This is generally done on a report to the Commission by the physician; and the allowance, if in money, is proportioned to the funds placed at the disposal of the Commission.

All the principal cities, as has been stated before, have infirmaries. These severally rest for support, partly on institutions—partly on the means of the communes—and partly on collections. They are distinct from the royal infirmaries, in not being government establishments. In Berlin, "the Charité" is a mixed institution. State and commune, both, contribute to its maintenance; the State, for this reason, that it is also an institution for instruction. As we shall notice it at large, presently, we postpone for the present, a further description of it. The academy of military medicine, (La Pepiniere) is connected with the university, in which latter every military physician must graduate as a doctor of medicine and surgery, none others being admitted to the medical charge of any government hospital or infirmary. There are besides, in Berlin, several hospitals for the aged and for incurables. The Jews, and the French colonists, have separate hospitals of their own for occasional disease. In the Provinces and Provincial towns the hospitals are well kept and ably managed—but other than military men are admitted to a share in the medical arrangements. Of these, the government pays the expences, out of a tax levied for the purpose, while it encourages and calls for voluntary contributions. Where the city infirmaries are supported out of the commune funds, the commune appoints the medical man. Where there are only royal infirmaries, the commune possesses the limited privilege only, of having a certain number of its poor as inmates, free of charge—when they require to exceed the number so privileged, they must contribute according to a fixed rate for every additional pauper from their districts—for example, at the Royal Charité, in Berlin, the commune is entitled to 100,000 days' food per annum, for their sick, 100 days food that is, gratis, for 1,000 sick, to be distributed among what number they please. All beyond that amount is charged against them. For the hospitals in general there are no universally applicable normal regulations; particular infirmaries have their particular rules, and the laws of administration proceed from the instructions of the officers. The administration of all Prussian hospitals is under the care of government.

The extent of the medical districts, and the amount of population assigned to the medical officers individually, cannot be ascertained with exactness, because each commune alone knows the necessities of its own population, and the extent to which it will go in providing for their relief. Of 272,000 inhabitants, the population of Berlin, 20,000 come under each of the district physicians and surgeons; but very small towns, of perhaps only 1 or 2,000 inhabitants, have a district physician or surgeon for their own poor alone.

It is thought to depend entirely on the locality. The introduction of district physicians, into the provinces generally, has been, hitherto, found impracticable. In Berlin, where there are 20,000 inhabitants and upwards to one poor's physician and one poor's surgeon, the number of poor in such a population is very different in different districts. The number of districts here is twelve; and the number of people, and of poor especially, varies very much in each. But the average number of pauper patients daily attended in each, is estimated at 20. The arrangement in provincial towns is seldom anything else than a meagre imitation of that in the metropolis. In the country, each parish has a physician and surgeon, with a small remuneration from government, but the poverty of the people prevents the relief from being provided as in towns.

The duties of the medical officers take different forms in the different parishes. In small ones, mere formalities probably do not exist. In general, the contract made with the medical man is his instruction. In Berlin, the physicians and surgeons have their duties more exactly defined by precise instructions and regulations, which are too extended to introduce in this place. Every quarter, lists of the reception and departure of sick persons are given in to the Poor Direction. From these lists a combined view is framed and forwarded to the royal police residency, the health functionaries of which take cognizance of the same in a health police point of view.

The poor's physician is not merely responsible for visiting the poor, but is also an officer for the care of the general health of the community, and is therefore expected to direct the attention of the police to every evil by which the health of society at large may be affected. He has to institute medicotopographical surveys, in order to the prevention of contagious and other diseases, and can make the police punish dirtiness in the streets and houses, bad habits, &c. they being bound to follow his preventive directions. On receiving his appointment he has to take an oath for the faithful fulfilment of his duties.

In addition to the quarterly return already mentioned, he has to make out a monthly return as well, for the Poor Direction, in the following form :—

Name.	Age.	Abode.	Rank or calling.	Disease.	How long ill when first seen.	Date when first visited.	Dismissed cured.	" uncured.	" dead.	" to the hospital.	General Remarks.

The medical man of the district to whose care the patient is committed, is expected to see him as early as possible after receiving notice of his illness, to treat the case himself, and if the illness be acute and dangerous, to visit

him *at least once a day*. And, should it be a chronic or slight ailment only, to see him, at least, twice a week: in fatal cases the sworn medical man has to give a certificate of the death, its place, time, and cause. There is no inquest of any kind held upon the body of a deceased pauper.

Except the ordinary qualifications already stated for the legal exercise of the medical profession at all, there is nothing required in order to an appointment either by government or the commune, as poor's doctor, or medical officer for the care of the poor. The required examinations, however, are so extensive and so strict in Prussia, that Prussian certificates are often received as sufficient in other German states. The strictness varying according to the degree aimed at—that for a surgeon being less than that for a physician, the reverse of our English custom. But then, a physician is not a mere physician, but one appointed by government to take charge of medical jurisprudence, or medical police, or both. No one who is not a graduate of medicine and surgery in one of the five Prussian universities can become a physician. Hence no surgeon can become a physician without recommencing the prescribed course of study for a physician. And none is allowed even to enter upon the study of medicine who is not a bachelor of science, Anglice, master of arts. Most physicians are also operative surgeons, and, in general, the minor operations alone are performed by mere surgeons.

The only gradations of rank among the medical officers of the poor, are such as their professional, not their official, position, confers. For instance there are two orders of physicians. 1. Physicians and surgeons combined, in a word, general practitioners; these are promoted from—2, the mere physician, and acquire the title of *doctor* (med. doct.). 3rdly. There are two classes of surgeons—graduates in surgery and non-graduates. In infirmaries, according to their size, there are directing and assisting physicians, but these must all, in the royal infirmaries, have been *military* medical men.

The *appointment of medical officers* emanates from different sources, as the State, the Commune, or, in cities such as Berlin, the Poor's Direction: and are held upon various tenures, either, *ad vitam aut culpam*—during pleasure—or, with a reservation of six months' notice before relinquishing or being dismissed their offices.

Promotions are regulated by the minister of the Department.

They are subject to no other general oversight than all medical persons or other functionaries. If physicians or surgeons are in fault they are responsible to government, in which, as well as in the ministerium for medical affairs, higher medical functionaries are set to act for the king. The poor's physicians, &c. are also responsible to the party-employing them, the Poor Direction or the Commune, as the case may be. But, although the particular administration has power to admonish him, he can only be dismissed after a formal judicial inquiry. And this is necessary to the safety of the individual, and the preservation of his character, for every practitioner is severely punished for mal-practice. In cases where a patient complains of injury sustained from his want of skill, mal-treatment, or neglect, the practitioner complained of is tried before the criminal court. In cases where the patient is poor, and complains of the poor's physician, the board under which the physician is acting is bound to investigate the case, and if the complaint be of a serious character, and duly established, he may be dismissed. If his offences be of

a minor kind, yet such as to render the dissolution of the relation between him and the Poor's Direction desirable, he receives notice to resign. If of a graver kind, he undergoes the legal penalties, for which application is made to the criminal court.

They are very inadequately remunerated. Experience and distinction being the equivalents with them as with us for adequate salaries. In Berlin, the poor's physicians receive £30 a year each—the poor's surgeons £8, £10, and £15 per annum. In the country, the medical officers for attending to the sick poor, are variously paid, some receiving 50, some 100, some 200 dollars, (3s. English). The doctors of midwifery ask no fee for attending the pregnant poor, midwives get a small one, varying from one to five dollars, on producing a certificate from the poor's physician. In small towns this is only one or less.

Between the medical faculties in their corporate capacity, and the medical districts, there is no necessary connexion subsisting. When any such subsists it is only by voluntary agreement between the magistracy and the university, as in Bonn, where the poor are cared for by the clinicum, and the city pays a certain sum for medicines. The universities being connected with the care of the sick poor only in so far as *clinical institutions* are, for the sake of instruction, maintained by the State; and then, such patients are taken care of, either at those institutions, or at their own homes, by the ambulatory clinic, and gratuitously supplied with medicines, in aid of the Poor Commission. In the Royal Charité at Berlin, there is this peculiarity:—the State must pay for the poor who go or are sent thither to be used for instruction, at the fixed rate of $\frac{1}{2}$ dollar daily.

Several of the districts in Berlin are connected with an ambulatory clinical school; and in them the poor's physician is an assistant physician to the school; and the sick poor, who apply to the poor's physician, are visited by the young medical men under his direction and that of the professor of clinical medicine. In Berlin, also, an ambulatory clinical school is united with the lying-in hospital; three assistant physicians directing the labours of the students or graduates through the city and suburbs, and the school providing nurses to attend the female during her first week, and assist her with her child. The lying-in-ward of the Charité has a school for students and midwives for Bonn and Brandenburg, under a director; and this is imitated in the provinces.

There is one other particular connected with the Prussian system, which is worthy of notice:—In cases of feigned sickness and pretended poverty, a medical officer discovering the fact announces it to the poor's direction, and the impostor is handed over to the criminal court to be punished at common law. Mere pretences of sickness and poverty, however, when detected in time to prevent imposition, lead to no punishment. In both cases, it must, of course, be difficult to detect the actual facts, for the ideas men have of poverty are all relative. But, wherever positive fraud has been perpetrated, the perpetrator is punished as any other common criminal would be. The poor-direction too, can recover by civil process, for support granted on false pretences to parties, not really poor. Neither is the poor's physician without his remedy—he can recover his proper fees, as from a private patient; and institute legal proceedings as well.

III. Before concluding the present article, with any observations of our

own upon the different systems of Rome and Prussia, for the administration of medical relief to the sick poor, we must crave the attention of our readers to a very excellent report of the great charity infirmary at Berlin, to which allusion has already been made in the preceding pages; the Report is drawn up by Rust, and entitled "*A Summary Account of the Patients who were treated in the Charity Infirmary during the year 1838; and a Statement of the Alterations which have taken place in that establishment in the course of the last ten years.*"

A. From this report it would appear that, at the close of the year, ending 31st Dec. 1837, there remained under treatment in the infirmary, 958 patients, of whom 893 belonged to the different parishes of Berlin, 26 to those of Potsdam; and 39 to other districts. In the year 1838, the admissions amounted to 7780, besides 341 children born in the establishment, so that the actual number of persons under medical treatment, and attended, during the year, amounted to 9079. Of these 8135 were dismissed in various ways, 6955 being cured, or having received benefit from the treatment adopted in their cases; 239 being pronounced incurable; 11 having absconded; 37 being still born; and 893 having deceased: consequently, on the 31st Dec. 1838, there remained under treatment, 944.

Of the 7750 patients, admitted during the year, 1936 were brought to the infirmary by the sanitary officers of the administration of the poor of Berlin; 401 by the police, from their different districts; 13 from the governors of the new hospital; 141 from the Orphan's Institution; 116 from the work-house; 1 from the Penitentiary; 2 from prison; 919 from the different lock-up-houses; 5 from the goal of the district Muhlendorf; 1206 from the different manufactories (Gewerke); 437 by the surgical inspectors of the houses of ill fame; 2241 by the different medical gentlemen of the town, or, who presented themselves voluntarily for admission. Besides the above, who were all from Berlin; there were 113 admissions from Potsdam, of whom 18 were women in a state of pregnancy; and, from other districts, 229, of whom 219 were sick, and 10 pregnant.

The 9079 patients under treatment during the year, spent in the infirmary 351,905 days altogether; of which, 322,138 are to be reckoned for the 8672 Berlin patients; 8830 for those of Potsdam; and 20,937 for those from other districts. According to this statement the number of days during which each individual was under treatment, averaged about 39.

The 322,138 days illness of the 8672 Berlin patients were further divided thus:—96,851 among 2956 pay patients; and 225,285 among 5716 gratuitous patients. Of those who paid, 693 belonged to the parishes of Berlin. Of the gratuitous patients, 4893 were from Berlin; and 107 from Potsdam.

The number of the cured, and, if not cured—at least benefitted and relieved, is, in proportion to the entire number of admissions as 7·8;—those of the incurable, as 1·34; of still-born to children born alive, as 1·9.

B. In the building destined for the higher classes of pay-patients, 16 patients remained under treatment on the 31st Dec. 1837; and 105 admissions took place between that date and the 31st of December in the following year. Of these, 95 were cured, or otherwise benefitted; 4 were dismissed as incurable; 11 died, and 11 remained under treatment at the last mentioned date. The proportion of the cures to the admissions is as 6·7; of the uncured cases, as 1·30; of the deaths, as 1·11.

"It would not be uninteresting," continues one author, "particularly when taken in connexion with the above summary of results, to publish the alterations which this establishment has undergone during the last ten years:—Alterations which merit notice the more because through them the hospital acquired that form in which it has begun not only to rival all the larger establishments of a similar kind, in the neighbouring states; but has likewise begun to exercise a governing influence upon the medical art of the whole kingdom. It is, so to speak, become the centre in which all the radii of scientific events in the practical art of healing, meet; and, by the carefully examined results of which, by far the greater number of all the physicians in the country profit; as, through them again, the knowledge thus acquired, is still further propagated, to the great benefit of their fellow citizens. But, in order to attain this end, it became absolutely requisite to alter and improve, according to circumstances, all the regulations of the establishment, both internal and external. Neither did former changes in the government of the infirmary, under which it thrived but indifferently, seem calculated to favour rapid improvements, as, through this change, the organic concatenation of the spreading administral maxims had been, necessarily, interrupted.

Till the year 1819 the former Poor-law Commissioners had been the governors of the establishment;—they were followed by the Royal Government; and, lastly, by the Royal Presidency of the Police. In 1828 the undersigned (Rust) was entrusted with the honourable commission to commence the long wished for re-organization of the Infirmary; and, so far as circumstances might permit, to complete it.

In consequence of his investigations, the affairs of the state hospitals as well as the superior direction of the charity, was, in the year 1830, committed to directors, appointed by a Royal Decree, bearing date the 7th of September 1830. These directors strove to the utmost of their power to improve the administration of hospitals. They had deeply studied the science of medicine themselves, and were well acquainted with the general deficiency respecting it in Prussia; a deficiency, rendered only more evident by comparison of the progress made in other nations, and especially by the example of their infirmaries.

The extension of the buildings; the complete re-organization of the internal regulations; and an elevation of the moral character of the establishment, as well as the provision of adequate funds for carrying out the necessary improvements, was the difficult task they had to perform.

In order to get rid of the many evils arising from the overcrowded state of its inmates, the Directors used great exertions to get the building enlarged. The dwelling-houses of such persons as, though attached to, were not obliged to be constantly resident in, the hospital, were transformed into wards; the admission of incurable cases, or of such persons, as had been, from destitution, accustomed to find there a temporary refuge, was entirely disallowed; and the distribution of the original and newly-acquired space was effected upon medical principles. A new hospital also, capable of holding from 3 to 400 patients, and also of future enlargement, was erected for the reception of the insane, and afterwards prepared for syphilitic and psorous cases. And by the separation of those patients a great advance was made not only to the enlarged accommodation of the whole institution, but also towards the intended object of transforming the charity into a more decent civil hospital. Separate buildings were likewise erected for patients afflicted with small-pox, cholera, or similar disorders; and these buildings were, at the same time, fitted for the reception of independent patients, who would find in them the comfort of roomy, and, at the same time, private apartments. Another infirmary was erected in addition, adjoining yet detached from the other, and perfectly isolated. A third is nearly finished, in which, when completed, all the washing of the infirmary is to be conducted. Another building was reared for the reception of the many strangers whose

necessary business leads them through the town; and also for the reception of the many unmarried people, who, in case of illness, are deprived of all the comforts of a home. *The cost of all these alterations and additional buildings amounted to two hundred and ten thousand dollars.*

Regulations were next made for ensuring stricter attention to the patients, on the part of the medical and other attendants; and perfect cleanliness in every part of the several buildings. And nothing was omitted to raise the moral character of the establishment in the eyes of the public. The patients, also, were not only separated, according to their sex and age; but likewise classified according to their respective diseases; and a directing physician appointed to every 150 patients; the number of such officers being thereby increased from 2 to 8.

Several subdivisions of the building were transformed into clinical institutions with competent masters, in which the second object of the charity, that it might become a school of practical instruction for young medical gentlemen, was achieved. The assistant medical officers, who are changed from time to time, were thus enabled to acquire practical skill in the treatment of disease themselves without risk to their poor patients, before embarking in private practice. Their operations and practice being all conducted under the special direction of the senior doctors, whose emoluments were raised according to their capacities, as were also the salaries of the nurses.

To any one who had known the institution ten years ago, the immensity as well as number of the improvements effected under the new direction, could not fail to be, at once, very perceptible. Formerly, it stood alone, and enclosed by a wall, in an unpopular and desert locality, to which, only one road led, and formed the extreme point of a thinly inhabited suburb. Now, the wall which once surrounded it has been removed several hundred yards off;—a contiguous bog which had proved pernicious to the health of the inmates, besides being a nuisance to the neighbourhood, has been transformed into a beautiful garden with which it is intended to surround all the buildings of the infirmary. The principle streets of the city leading to the 'Charity,' have been since adorned with handsome pavement, and the environs of the establishment decorated with modern and beautiful houses, though built at a certain distance from the infirmary, that all occasion of fear to the inhabitants might be removed, thereby transforming the immediate locality of the infirmary into one of the finest quarters of the city of Berlin.

The exercise of a strict but judicious economy helped very materially to remove the pecuniary difficulties with which the establishment had to contend. Among other instances, the article of diet may be mentioned. The governors, formerly, were not very careful on this point, not sufficiently considering either the recovery or the welfare of their patients. And the same was the case with medicines, bandages, &c. It is true, that such economies, in a thriving establishment, served principally to meet incidental expences in other departments, where increase was necessary and unavoidable. Nevertheless, it is proper to cite one example, on account of the considerable saving effected—it is drink, and principally that of malt liquor, of which, for many years, there had been a constant and prodigal abuse, for until the year 1828 the annual cost of this kind of drink alone reached no less a sum than 14,000 dollars, and, notwithstanding the immense augmentation of patients during the subsequent period, the consumption was so reduced, that the annual expence did not exceed from 3 to 4,000 dollars, thereby effecting a saving of from 10 to 11,000 dollars yearly."—*Rust.*

IV. If there be one principle more readily deducible than another from the facts collected in the preceding portions of this article, it is that—in order to an effectual administration of medical relief generally to the poor of any country—the management of any provision for affording such relief

should be committed to a director, professionally qualified to say what is and what is not necessary; and officially confined to the single task of superintending the operations of all the subordinate instruments employed to render that relief generally applicable, and always efficient.

Where, as in England, the directing power is a Board composed of individuals, whose other duties are such as to preclude the possibility of their giving an undivided attention to the single object of affording prompt relief in time of sickness; that object can only have a share, and sometimes, perhaps, only a small share of their attention; and of necessity can only participate with other objects in a division of their sympathy, while of itself an object sufficiently vast and important to demand and to deserve undivided attention and sympathy, without which, it is obvious, it can never secure those energies or that zeal which are indispensable to its attainment.

Where, as in England, the attainment of an object, confessedly not more desirable than important, calls for an amount of professional knowledge scarcely to be looked for except in the profession itself, it follows that to entrust the control or management of any organization whereby the object in view is to be obtained to laymen, is to ask of ignorance what is consistent with knowledge alone; and to task unskilfulness for that which consummate skill alone can perform. It is the old Egyptian folly in Government—of exacting labour without ability, and compelling men to make bricks without allowing them the straw with which to make them. Such is the case in Italy. Such is the case in Germany. Such is the case in England.

In Prussia, for instance, while the hospitals are admirably managed, the medical relief of the poor at their own homes is as abominably mismanaged, where managed at all; although the history of one of the former institutions alone, since it passed into the hands of a medical director, and a consideration of the authorities by whom the other is regulated, would transform the mystery to as simple a matter.

Neither does it appear to be duly apprehended by the multitudinous ecclesiastics of modern Rome why, in their hospitals, the mortality is so frightful;—or why, in their lunatic asylum, the spectacle of men and women herded together like swine, is deemed too frightful to be exposed to the gaze of the stranger.

Priests manage the Roman hospitals. Medical relief in Prussia is provided for by municipalities. In England it is effected by a Poor-law Commission, the *délevés* of the ministry, and Boards of Guardians, too frequently the mere creatures of a predominant parochial faction, and indifferently composed, as in one of the parishes before our eyes of a schoolmaster, a grocer, a baker, a butcher, a mender of roads, and a mender of shoes, a keeper of the insane, and a *gentleman*.

It would surely be no more than a reasonable concession, not only to the profession, but to common sense and justice, and to the interests of the poor, were some medical knowledge infused into the "Commission." We can see no objections to the addition of a medical commissioner to the stock in esse, save perhaps the unwillingness of the latter to admit a new associate, or the lukewarmness of Government towards a class of men who cannot offer great political services. On this last score, however, we are not so sure of the policy of affronting an extensive and influential body, and the working of the New Poor-law shews, we think, the inconvenience of their

opposition. When we compare the treatment of the Bar and of our own profession, we cannot but be struck with the enormous distinction which a minister makes between those who can and those who cannot brawl for the purposes of party. Is it ever to be thus?

I. ON THE NATURE AND STRUCTURAL CHARACTERISTICS OF CANCER, AND OF THOSE MORBID GROWTHS WHICH MAY BE CONFOUNDED WITH IT. By *J. Müller*, M.D. Professor of Anatomy and Physiology in the University of Berlin, &c. Translated from the German, with Notes, by *Charles West*, M.D. Graduate in Medicine of the University of Berlin. Illustrated with numerous Steel Plates and Wood Engravings. Part I. Sherwood and Co. London, 1840.

II. CYCLOPEDIA OF PRACTICAL SURGERY, Part VI.—CANCER. By *W. H. Walshe*, M.D.

IN the last number of this Journal we took up the work whose title stands first at the head of this article, and introduced to our readers that part of it which treats of Carcinoma. We now turn to the second division of it, appropriated to some of those morbid growths which may be confounded with Carcinoma—Enchondroma—Adipose Tumors—and Compound Cystoid and Cystosarcomatous Growths.

I. OF CARTILAGINOUS TUMORS, OR ENCHONDROMA.

M. Müller remarks, that the term Chondroid has been applied to many morbid structures which differ essentially from cartilage. He proposes to describe under the name of Enchondroma, or Chondroma—true chondroid growths possessed of the characters to be described.

1. General Description of Enchondroma.

"Enchondroma," says M. Müller, "is a fungoid growth proceeding from bones, or from soft parts, as, for instance, from glands, and curable by amputation. It forms a spheroidal, not lobulated tumor, which equals or even exceeds the size of the fist. When it appears in soft parts, it is furnished with a thin covering, resembling cellular tissue; in the bones, where its occurrence is more frequent, it retains the periosteum as its investing membrane. This disease presents itself as a soft expansion of the bone, developed either within its interior, or, more rarely, from its periphery. In the former case it is covered not only by the periosteum, but also by the bone itself, which is sometimes expanded to an extreme thinness. In some instances, indeed, this bony shell is not entire, and its only remains are a few thin isolated bony laminæ on the surface of the tumor. When the growth springs from the circumference of the bone it does not necessarily have any osseous investment. The articular surfaces of the bones are usually but very little altered by this disease, often they are not at all affected, and

even in instances where the phalanx of the finger has been converted into a round tumor as large as an orange, the articular surfaces are in most cases unchanged in structure, and maintain their proper position. How great soever may be the expansion of the bone, the disease seldom advances beyond the articular surface, and if two neighbouring phalanges of a finger form this expansion, the two tumors very rarely become confounded with each other. The occurrence of ankylosis also is unusual, though it took place in a case of enchondroma described by Mery.

The parts covering the enchondroma generally remain unaltered, notwithstanding the large size to which the tumor may attain. This circumstance, together with the slow, painless development of the tumor, and its existence for ten or twenty years without producing any injurious effect on the constitution, sufficiently prove its benignant character. The contents of the tumor are soft: when it is developed in or on the bones small spiculae of osseous matter are usually intermixed with its tissue, although their presence is not constant. The parenchyma of the growth usually displays, when divided, two different constituents, distinguishable with the naked eye; the one a fibro-membranous substance, the other grey, pellucid, and resembling cartilage or very firm jelly. The fibro-membranous part, which is but seldom absent, forms cells both large and small, some equalling or even exceeding the size of a pea; and the larger cells often containing smaller ones in their cavity. Within these cells is contained the other substance, which is grey, somewhat pellucid, differing from cartilage in being more soft, and more nearly resembling in consistence the soft hyaloid cartilage of cartilaginous fishes: in some instances, indeed, it is not firmer than very firm jelly. These masses are easily removed from the cells, and are then found to be very friable. Like the hyaloid cartilages of cartilaginous fishes, this substance preserves its pellucid character in alcohol. The intervention of membranous structures connects the transparent cartilaginous masses, and imparts to enchondroma a conglomerated appearance, which does not occur in any other form of exostosis. The slight inequalities which may be seen on the surface of an enchondromatous tumor indicate this conglomerated structure of its interior." 99.

The fibro-membranous part, proceeds our author, appears, under the microscope, to be composed of an interweaving of transparent fibres; the hyaloid mass, however, so closely resembles cartilage, as to suggest to the author the name he has applied to this form of tumor. Real cartilage, even that of the cartilaginous fishes, contains, scattered through its substance, oval or round semi-transparent cartilage corpuscles,* and cells containing granules, or smaller cellules; and precisely such microscopic corpuscles are contained in the hyaloid mass. But, how similar soever to cartilage the hyaloid mass may appear, when viewed by the naked eye, or by the aid of a microscope, yet the fibro-membranous capsules or cells which usually intersect the whole of the tumor distinguish its texture from that of true cartilage. These membranous structures contain blood-vessels.

M. Müller has seen many specimens of enchondroma both in Germany and England. The bones are the most frequent seat of it. In only four out of thirty-six cases, was it found occupying the soft parts. In all of these four cases the parts affected were glandular structures, namely, in one

* "These bodies were first observed by Professor Purkinje, in human cartilage, and were described by him in a dissertation by Deutsch, *De penitioni ossium structura observationes*, *Vratisl*, 1834."

instance the parotid gland, in another the mammary gland, and in the remaining two the testicle. The bones most subject to this disease are the metacarpal bones and the fingers: in fact, five-sixths of the cases of enchondroma in the bones have occurred in those parts. Three cases were observed in the leg, one only in the thigh, one in the os ilium, one in the basis of the skull, and one in the ribs.

2. *Different Forms of Enchondroma in the Bones.*

Enchondroma affects two forms—one, the more common, a central one, developed in the interior of the bone, and accompanied with expansion of the osseous shell—the other, on the surface of the bone, unattended by expansion of the bony shell.

A. *Enchondroma of the Bones with Osseous Shell.*—This is by far the more frequent form in the smaller cylindrical bones, in the metacarpal and metatarsal bones, and in the phalanges of the hand and foot. The first changes are softening of the spongy substance in the interior of the bone, the place of which is occupied by the soft mass of enchondroma. While this process is going on, the shell of the bone becomes dilated, as though from the action of some internal force. This distention, however, can be the result only of some change in the nutritive process, for the attenuated shell does not break, but long maintains its perfect continuity. In proportion as the old bone is destroyed, new bone is deposited on the surface of the tumor, and thus the shell of the bone is the subject of a constant alteration. The progressive growth of the new substance in the interior of the bone dissolves here and there the continuity of the bony shell; and in course of time this shell is reduced to a few thin isolated laminæ on the surface of the tumor, which still retains its smoothness, and spheroidal shape.

It seems dubious whether Sir A. Cooper has described this form of enchondroma under the head of cartilaginous exostosis of the medullary membrane. M. Müller, however, expressly cautions us against confounding fibrous tumor from the interior of the bone with enchondroma.

B. *Enchondroma of the Bones, without Osseous Shell.*—In some bones in which the spongy tissue predominates, enchondroma occasionally becomes developed from their exterior without being invested with a bony shell—as from the pelvis, cranial bones, and ribs. The tumor is, in these instances, less regularly spheroidal, and its surface less smooth, displaying an agglomeration of roundish bodies, some larger than a pea, others smaller, which are cells containing a soft, grey, cartilaginous mass. The whole tumor is made up of a conglomeration of such cells. The preparation in the museum of the College of Surgeons, in London, labelled, “cartilaginous tumor formed on a man’s ribs,” is of this nature. The museum of Saint Bartholomew’s Hospital contains (Morbid Preparations, eighteenth series, No. 14) a specimen of enchondroma of the basis of the skull. In the museum of the Middlesex Hospital is an immense mass growing from the inner surface of the ilium, which presented the structure of enchondroma.

The larger cylindrical bones are also sometimes liable to the exogenous form of enchondroma, especially if that growth is developed in parts where

the spongy structure abounds, as in the upper end of the tibia. In such a case, the tumor may be destitute of osseous shell. A preparation of this sort (Morbid Preparations, first series, No. 41) is contained in the museum of Saint Bartholomew's Hospital.

The museum of Guy's Hospital contains a preparation, numbered in the catalogue 666*, and called an osteo-sarcoma. It is an enchondromatous growth, without a bony shell. Sometimes this growth appears on the leg, encased within a bony shell, at least the examination of two dried preparations in the museum at Berlin seems to warrant this conclusion. In some rare cases of enchondroma of the phalanges of the finger, the tumor is destitute of bony shell, as may be seen in two preparations of enchondroma, in the museum of Guy's Hospital. M. Müller thinks it evident that what Sir A. Cooper describes as cartilaginous exostosis between the periosteum and bone is only ordinary external osseous exostosis with cartilaginous animal basis.

3. Microscopic Examination of Enchondroma.

The minute structure of enchondroma corresponds exactly with that of cartilage, and all that the employment of high magnifying powers has brought to light with regard to the latter substance, has been confirmed by examination of the former. But it resembles more the cartilage in the embryo than in the adult. In most cases cells with nuclei only are seen; the presence of secondary cells is more rare. Usually the cells are in close contact with each other, and there is no sign of development of intercellular substance, though, in a few cases, a clear substance may be distinguished between the cells. Here and there bundles of fibres are visible.

"The size of the cells," continues M. Müller, "exceeds several times that of the red particles of human blood. The nuclei, which have a diameter of 0.00032 to 0.00042 of an English inch, are sometimes round, at other times oval or irregularly elongated. The nucleus appears somewhat flattened, but its form is often very irregular. In addition to the nuclei, corpuscles are seen here and there, of an irregular form, furnished with spiculated appendages, often of considerable length, and similar to the spiculated osseous corpuscles described by the author. Occasionally these spiculæ extend over a whole cell, or even further.

In most instances, enchondroma remains stationary at that stage of development which cartilage attains in the embryo, and presents an almost entirely cellular structure. A very firm and hard cartilaginous tumor of the testicle, however, which once came under the author's notice, showed a very high degree of development in the intracellular cartilaginous mass, and closely resembled the natural appearance of those cartilages in which the cellular structure is not permanent." 109.

4. Chemical Analysis of Enchondroma.

A. *Enchondroma of the Bones.*—If, says M. Müller, portions of enchondroma of an osseous structure are boiled for ten or eighteen hours, they yield a considerable quantity of gelatine, which forms a jelly immediately on cooling, but differs completely in its chemical characters from ordinary gelatine, or *colla*; while it coincides exactly with the peculiar gelatine which the author has discovered in cartilage, and to which he has applied the name

of *chondrine*. The author detected it first in enchondroma, afterwards in the permanent cartilages. M. Müller proceeds to offer a description of these two sorts of gelatine.

1. *Colla*, common glue, the gelatine obtained from tendons, membranes, bones. The characters of this kind of gelatine are well known, and it is also a fact familiar to all, that isinglass differs from ordinary gelatine, or glue, only in being more soluble in alcohol. Its behaviour to the common chemical reagents we need not stop to consider.

This kind of gelatine is extracted, by boiling, from the skin of man or of beasts, from tendon, from fibro-cartilage, from the inter-articular cartilages, from cellular tissue, serous membranes, and from the cartilages of bones after they are ossified; but is not obtained from the permanent cartilages, nor from those of the bones previously to their ossification. The same kind of gelatine was likewise obtained by boiling from enchondroma of the parotid gland: enchondroma of the bones, however, and of the testicle, became resolved by long boiling into cartilage gelatine, or chondrine.

2. *Cartilage gelatine, chondrine*.—This matter exists in the permanent cartilages, with the exception of the tendino-fibrous cartilages; in the cartilages of the larynx, in those of the ribs, and of the joints, and in the cornea; all of which yield it if boiled for ten, fifteen, or eighteen hours, and become wholly converted into it if boiled for a sufficiently long time. A concentrated solution of chondrine is less coloured than a solution of common glue. A solution of it, like a solution of common glue, solidifies in cooling, and forms a clear jelly; if evaporated to dryness, the matter is less brown than ordinary glue. Though chondrine is capable of forming a jelly, though it swells up when moistened with cold water, and is dissolved by hot water, just like ordinary gelatine, and though infusion of gall nuts, chlorine, alcohol, and corrosive sublimate produce the same results with both, yet the former is differently affected by alum, by sulphate of alumina, by acetic acid, acetate of lead, and sulphate of iron. All these matters precipitate chondrine, while they do not produce the slightest effect on ordinary gelatine. These precipitates are not soluble either in hot or in cold water, though they may be dissolved by an excess of the solutions of alum or of sulphate of alumina, which ought therefore to be added only drop by drop to any fluid from which it is wished entirely to separate the chondrine. Evaporation of the filtered fluid will shew when the chondrine has been entirely separated; for the fluid then ceases to gelatinize, and, indeed, contains only a minimum of animal matter. Hence it is evident that the presence of chondrine is the cause of the gelatinization of a solution of permanent cartilage, and that chondrine is not contained in it in addition to gelatine, as a sort of subsidiary constituent. We have not space for the elaborate account of the chemical properties of chondrine furnished by M. Müller, nor for the distinctions between it and caseine. Nor can we pursue our author in his hypotheses on the exact relation between colla and chondrine, and on the causes of their differences. It is certainly true, as he remarks, that among the most remarkable chemical changes which any tissue undergoes, are those which ossification produces in the cartilages of bones. According to the author's observations, cartilage becomes changed during this process from chondrine into gelatine, and this metamorphosis takes place alike in healthy and in morbid ossification. The cartilages of

the ribs, larynx, and trachea, and the cartilaginous investments of the articular surfaces, become resolved into chondrine by boiling during fifteen or eighteen hours. The cartilages of unossified bone yield the same substance; but bones, when ossified, do not contain chondrine, but only gelatine. In performing these experiments, it is a matter of indifference whether or no the cartilage is freed from the salts of lime, by means of hydrochloric acid, before boiling; for in either case the gelatine obtained is the same, and resembles common glue.

It is evident, he goes on to say, that a great change takes place in cartilage gelatine at the time of the ossification of bones; whether owing to a change of some of its constituents, or to its combination with new ones, as salts; phosphate of lime for instance. This change seems to be essentially necessary to ossification, for, as far as is yet known, no bone, when ossified, contains an appreciable quantity of chondrine. Even the permanent cartilages lose it during accidental or morbid ossification.

The morbidly ossified cricoid and thyroid cartilages of the human larynx were examined, such parts as preserved their cartilaginous structure being carefully separated before boiling. The gelatine obtained by pounding and boiling the ossified parts was not chondrine, but colla; it was not precipitated by acetic acid, alum, sulphate of alumina, or acetate of lead. The two former reagents produced a few scarcely perceptible isolated flocculi, which were seen only on looking at the fluid with close attention. Since, however, they immediately precipitate chondrine, these flocculi were doubtless traces of it arising from some imperfectly ossified portions of cartilage. A permanent cartilage, which, as such, contains chondrine, changes that substance (either before morbid ossification begins, or while that process is going on) into bone, gelatine, or colla.

It was, reasoning on these facts, not unnatural to suppose that diseased bones which have lost, more or less completely, their salts of lime, would give out chondrine instead of colla. Such, however, is not the case.

"The alteration which the animal matter undergoes in osteomalacia is of a peculiar kind. The author has examined softened bones in the human subject and in other animals. In both cases, long-continued boiling produced neither colla nor chondrine. The extract continued thin and fluid, did not gelatinize when evaporated, passed turbid through the filter, and, when a finer filter was employed, was seen to be transparent, and of a yellowish-brown colour; it was precipitated by tincture of galls, and by alcohol, but neither by acetic acid, acetate of lead, or sulphate of iron. Sulphate of alumina did not cause any marked precipitate, but threw down only a few flocculi, which were not seen except by looking attentively, and which were dissolved by adding sulphate of alumina in excess. Liquor potassæ caused a precipitate. It should be observed that the author speaks here only of the highest degree of osteomalacia, for the bones he examined were perfectly soft and pliable. The spiculated osseous corpuscles are still visible in such bones, although the matter of which they are composed has evidently undergone a peculiar change. In the case of a goat, the pliable pieces of bone became brittle when boiled for a long time, and the water was rendered turbid, and was mixed with much fat. Portions of the os calcis of a man affected with osteomalacia were still softer, and contained a large quantity of fat in their spongy substance: they were boiled in alcohol to extract the fat, and the structure which remained was membranous, pliable, rendered softer by long boiling, but did not swell. It appears that the cartilage in osteomalacia becomes softened by changes in its constituents, or by combinations with

salts, and that a substance remains which may be partially extracted by boiling, but which does not gelatinize."

"This examination shews how great is the difference between osteomalacia and those changes in the bones which enchondroma produces. In true softening of the bones, their gelatine completely loses its nature; in enchondroma, on the contrary, there is a new primitive formation of cartilage, exactly similar to its first formation in the embryo; its substance, therefore bears no chemical resemblance to such as have become ossified, but is real chondrine. On boiling the contents of a very remarkable variety of enchondroma of the bones, the author extracted a quantity of matter which gelatinized completely when cold; but this jelly was chondrine, for its solution was precipitated by alum, acetic acid, acetate of lead, and sulphate of iron; and a few drops of a solution of alum precipitated all the gelatine from a considerable quantity of fluid in large masses, which were not redissolved in hot water. In this disease permanent cartilage had become developed, with morbid growth in the interior of the bone." 124.

b. *Enchondroma of the Soft Parts.*—Different specimens furnished different results. A very firm cartilaginous tumor of the testicle, which had developed itself in an elderly man, close to a carcinoma reticulare of the same organ, but perfectly unconnected with it, and in which the cartilage cells were separated by the intervention of a firm substance, yielded chondrine when boiled. On the other hand, not only could no chondrine be obtained from the enchondromatous growth of the parotid gland, but the tumor gave out readily a large quantity of gelatinizing colla.

5. *History of the Development of Enchondroma.*

Our author first notices the development of Enchondroma, as observed under the microscope.

Schwann has proved that the cartilages of all animals are originally cellular in the embryo, and he established the principle of their formation from the nuclei of cells, and discovered how young cells are developed within the cavity of older ones.

Now, without going into the details of the microscopic development of enchondroma, we may cite the general conclusions with respect to it.

"The chief difference between the morbid and the natural formation of cartilage consists in the persistence, in the former, of that cellular structure which exists in the embryo. Many other tumors afford illustration of this remark. It is not any peculiar form of their elements which stamps upon morbid growths their distinctive character, but it consists partly in the formation of the ordinary primitive structures, where they are not necessary; partly in the imperfect development of these tissues, and its arrest at a stage which, in health, is but transitory. In the healthy primitive formation of cartilage, the vital principle of the whole organism controls the monad state of existence of the cells, and sets to it bounds which it does not pass. In process of time the walls of the cells thicken, and an interstitial indistinctly fibrous mass of cartilage is formed betwixt the cavities of the germinal cells. In enchondroma, on the contrary, the sunken vitality of the part in which the diseased growth is developed seems to set to it no such limits, but the growth proceeds, slowly increasing to a larger and larger size. Usually the walls of the cells do not thicken; the formative process cannot raise itself above that form of cartilage

which first exists in the embryo, but continues without ceasing to reproduce this embryonic structure." 127.

From the microscopic development of enchondroma, M. Müller passes to the duration and termination of enchondroma.

The great length of time that these tumors may exist, is shewn by the history of many cases of this disease which have been erroneously regarded as cancerous. M. Müller refers to several recorded cases in proof of this. In all these cases, the long time, often fifteen or eighteen years, occupied by the disease in its development, and the absence of dangerous symptoms during that period, are very striking. All writers too, concur in representing the development of these tumors as being unattended by much pain. So that enchondroma may continue long, occasion little suffering, and give rise to no degeneration of the superincumbent parts.

But, when inflammation is set up in the tumor, it becomes painful, and bursts. The distention of neighbouring parts, and accidental injury to the enormous tumor bring on, in the course of time, inflammation of it and of the neighbouring textures; inflammation is followed by suppuration, the tumor itself discharges sanies, and the bones, the proper structure of which is already destroyed, become necrosed. Such was the state of the disease in the cases described by Mery and Scarpa.

If the part affected by the tumor is amputated, the disease does not return; but if, after the tumor has burst it still remains in connexion with the body, it may, like every extensive local disease, bring with it the ruin of the whole constitution.

6. Nature of Enchondroma.

It has been already stated that enchondroma consists mainly in the formation of cartilage resembling the primitive form of that substance in the embryo. Its causes are partly local, partly general.

Local Causes.—These may be stated, with great certainty, to be serious injuries to the vitality of the bones, and, in many instances, mechanical violence. This is confirmed by the cases already related, and will be found to be no less substantiated by the histories of other tumors which older surgeons have written, and in which, though the names applied to them are often very various, yet the characteristic features of enchondroma may be easily distinguished.

Severinus quotes a case from Nicolaus Larcho, in which the tumors had appeared in consequence of the bite of a pig, while the patient was young; and in the cases of Schaper, Otto, Klein, and Ph. v. Walther, the disease was referred to a bruise.

General Causes.—In some instances no local causes can be made out, and there is strong evidence of the existence of some powerful general one. A case of Professor Pockels is in point. The tumors of the metacarpal bones and phalanges of the fingers had formed not on one hand only, but there was a commencement of the same disease in the other hand; and the most singular fact of all was, that the feet shewed a disposition to become the seat of the same morbid process. The pathological changes in the feet and in one hand were but slight, and did not occasion inconvenience, but

the other hand was amputated. The disease did not return; the patient is still alive; his hand and feet are in the same state as before, and probably there is nor much reason to dread the further development of the disease, since it had begun in the earliest infancy of the patient, and had progressed very slowly. Ruysch, likewise, has described some cases in which tumors grew from the fingers and metacarpal bones of both hands, and from the toes of both feet.

M. Müller thinks this general cause akin to scrofula. Both diseases are constitutional, but in no way related to carcinoma, and both are most active during childhood. The observations which have already been adduced suffice to prove that enchondroma occurs most frequently during childhood. Most of the persons in whom it was seen were young men and boys, in whom it had arisen at a very early age. In after-life the general predisposition to enchondroma seems to be extinguished, just as is the case with scrofula. The tumors, which are the effects produced by the previous disease, continue to exist and cannot be removed; but in the adult, after the diathesis has ceased, they continue as merely local affections, which, therefore, do not return after amputation. Yet there are distinctive differences between enchondroma and scrofula, for the affections of the bones in the latter are well known and peculiar, nor do scrofulous growths and tubercles occur in enchondroma. The cause of enchondroma, says our author, seems to consist rather in a peculiar formative process in the osseous system, in consequence of which, especially when local injuries have been inflicted on the bones, cartilage, in its primitive embryonic state, is developed, and continues to be formed without ever attaining to consolidation or perfect organization. The natural tendency of the part to ossification, and the influence of the whole organism, are unable to control the growth of enchondroma, which is produced by the innate vitality of the cartilage cells, and their unceasing multiplication. Other alterations of the bones are very rarely combined with enchondroma; indeed, the only instance of it with which the author is acquainted, is that of a hump-backed man, whose case Severinus has related.

Enchondroma has figured under various names. It has been successively "Spina Ventosa," (one of many affections lumped together under that ridiculous denomination.)—"Atheroma Nodosum,"—"Osteo-Steatoma,"—"Osteo-Sarcoma." Otto has confounded it with cancer of the bones, how erroneously the following cheering statements will shew;—

"The amputation of enchondroma is almost invariably successful, as in the cases of Severinus, Mery, and Scarpa, in the two cases related by Ph. v. Walther, in the two which occurred to Klein; in the case of enchondroma of the tibia, the preparation of which is now in the Museum of St. Bartholomew's Hospital; in the case observed by Professor Pockels; and in those which came under the notice of Professor v. Graefe, the preparations illustrating which are now in the museum at Berlin. Of thirty-six cases, the histories of which have been ascertained by the author, two only had a fatal termination: in one of these cases, the tumor, which was situated on the base of the skull, encroached upon the cavity of the cranium, as well as on that of the nose, and proved fatal, owing to its situation. The second case has reference to an enchondromatous tumor of the thigh bone, which is now preserved in the museum of Guy's Hospital, and is numbered 666* in the catalogue. In this instance, the tumor, which probably brought on death by the loss of the fluids which it occasioned, was removed from the body of the patient after he was dead."

7. Differences between Enchondroma and other Tumors of the Bones.

Enchondroma has no resemblance in structure to schirrhous and medullary tumors of bones, *their* basis being albumen, and that cartilaginous mass, which, when boiled, yields chondrine, being absent.

If fungus medullaris is developed in the interior of a bone, it neither perforates it nor expands it in a spherical manner. It is only in very rare cases of medullary sarcoma that real expansion of the bones takes place. If fungus medullaris is developed on the surface of a bone, it often contains in its interior delicate acicular, or lamellar spiculæ, which shoot from the surface of the bone. In cancer alveolaris, cavities may be observed filled with a transparent jelly; but this structure differs both microscopically and chemically, and, when boiled, yields no gelatine.

"The bones," continues M. Müller, "are subject to another fungous growth, which differs not less widely from enchondroma, and resembles it only in its curability by amputation. The author had an opportunity of studying the characters of this growth, the tumor fibrosus s. desmoides, on a hand which was extirpated with perfect success, by M. v. Graefe. The tumor projected from several of the metacarpal bones, both towards the palm and towards the back of the hand, and presented a lobulated surface and a firm tendinous structure in its interior. When divided, it shewed that white and perfectly fibrous structure whence the tumor derives its name, and which similarity to the glistening satiny tissue of the aponeurosis is characteristic of the desmoid growths. Under the microscope it displayed layers of fibres intertwined, without any trace of cavities or corpuscles. Its base was seated on the surface of the metacarpal bones, from the periosteum of which it was developed; while the bone beneath remained undestroyed, and only slightly rough, as it always is in the neighbourhood of tumors. The arteries of the palm, the muscles, and tendons, ran in the form of an arch over the tumor. The museum of St. Bartholomew's Hospital contains a specimen (Morbid Preparations, first series, No. 148, 149,) of this disease in the substance of the lower jaw. The tumor had developed itself in the interior of the bone, and likewise on its surface."

Enchondroma cannot be confounded with the osteoid, or purely osseous tumor of bone.

But there are other growths, curable by amputation, though often confounded, under the names of osteo-sarcoma and osteo-steatoma with cancer of bone. That form of morbid growth called osteosarcoma, which is not rare in the bones of the face, and particularly in the lower jaw-bone, is a fungus of a peculiar nature, curable by amputation. Its substance never resembles cartilage, is of a greyish white colour, of an albuminous nature, and cannot be resolved into gelatine by boiling. Examined under the microscope, it presents a structure composed of minute cells furnished with nuclei, or else a soft tissue made up entirely of caudate corpuscles, whose linear arrangement gives it a fibrous appearance. These osteosarcomatous growths are sometimes composed entirely of an albuminous substance, but in other cases they yield some gelatine after long boiling. It is moreover, far from an easy matter to distinguish between these growths and those tumors of the bones which are really of a cancerous nature. This latter is an important observation, and should not be forgotten by those who affect the possession of certain means of diagnosis between the malignant and the non-malignant tumors of the facial bones.

Expansion of the bones is sometimes occasioned by the development within their substance of compound cysts, or of hydatids. These constitute a destructive disease, which sometimes implicates a great part of the osseous system. Hydatids are formed in the medullary tissue of the bones, and in other cases they do not produce this effect. The spongy bones, as those of the pelvis, or the ribs, are most subject to expansion; and when it does take place, the hydatids are usually found lying in a soft bed abounding in fat, which is a growth from the medullary texture; while the osseous tissue is absorbed, and forms only fragments here and there in the interior of the tumor. The shell of the bone becomes distended in a spherical manner, as in enchondroma. The disease, as might be expected, renders the bones very liable to fracture, and it often leads to a fatal result.

M. Müller devotes a section to the cases of enchondroma on record, and to the specimens contained in anatomical museums—a very useful section, and we recommend it to the reader. We have not, however, space, nor is it necessary for our purpose to notice it. We therefore pass to:—

II. ADIPOSE TUMORS.

The cells of adipose tissue are shut sacs, within which the fat is contained. In most animals these sacs are round, but in some, as the sheep and ox, they have a polyedrous form. It is more difficult to detect the nucleus in the wall of adipose cells, than in cells of other tissues; but, even in them, Schwann has demonstrated the existence of nuclei.

Morbid adipose tumors are repetitions, more or less modified, of normal adipose tissue. Some are made up of ordinary fat, such as is found in the healthy adipose tissue of the human subject, while others contain likewise cholesteatoma, and may be distinguished by their laminated structure.

M. Müller divides adipose tumors into three classes:—The varieties of lipoma form the first; adipose cysts the second; and the laminated fatty tumor the third. In lipoma the fat is contained in ordinary adipose tissue, and is consequently separated into innumerable isolated compartments by the walls of the contiguous cells. In adipose cysts, the fat is not distributed through small cells, but is contained, partly in a fluid state, partly in the form of fat globules, in the interior of a larger sac, which is generally furnished with thick membranous parietes. In the former, the production of the new fat takes place just as in the healthy body; while in the latter a single fat cell appears to become predominant, and, its walls being thickened, it constitutes an independent cyst.

1. *Lipoma*.—Most specimens of lobulated lipoma resemble in structure ordinary adipose tissue; their cells are of a round or oval shape, and the only distinction between the two consists in the former being made up of a mass of these adipose cells, enclosed by an investment of thickened cellular tissue, while the different lobuli are separated from each other by thinner membranous septa.

M. Müller arranges lipoma thus:—

A. *Lipoma Simplex*, to which the name lipoma is usually applied. These growths seem capable of being formed in any part where there is cellular

tissue. In Meckel's museum at Halle, the author saw a small adipose tumor which was situated between the optic nerve and eminentiæ candicantes.

b. *Lipoma Mixtum*.—In this case, the interstitial cellular tissue of the adipose tumor is greatly developed, and forms strong membranous septa, which intersect its substance, and thus give it a much greater degree of firmness than is possessed by simple lipoma. Hitherto the author has met with but two specimens of this form of tumor; once in the spermatic cord of a man, and once between the muscles of the thigh; and in this latter case the tumor had acquired an extraordinary size.

c. *Lipoma Arborescens*.—This structure consists of arborescent productions, entirely composed of adipose tissue. Growths of this sort occur in the joints, especially in the knee joint, where they spring from the free portion of the synovial membrane. In this situation they are covered by a prolongation of the synovial membrane, and hang loosely into the cavity of the joint, forming arborescent tufts, somewhat swollen at their extremities.

2. *Adipose Cysts.*

The ovaries are the most frequent seat of this disease, in which fat, partly in a fluid state, partly in the form of globules and free from adipose cellular tissue, is contained in a large cyst, with dense parietes. In addition to fat, these cysts usually contain hair, either loose within their cavity, or proceeding from their walls; each hair springing from a distinct follicle. In birds, feathers are found in these situations. Gurlt regards the fat in these hair-containing cysts as analogous to that which is formed by the sebaceous follicles of the cutis, and poured by them into the hair follicles. The sebaceous follicles of the skin may themselves become converted into cystoid tumors, and to the accidental occlusion of their orifices many encysted tumors owe their origin. This fact had been rendered probable by M. v. Walther and Sir A. Cooper; and in one instance the author met with a decisive proof of its truth. In an individual, all the sebaceous follicles of the skin of the nose had become extremely enlarged, and one was converted into an encysted tumor eight lines in diameter. Microscopic corpuscles of irregular polyedrous shape, and resembling epidermoid or epithelium cells, except in being destitute of nuclei, formed the contents of these cysts. These corpuscles are probably produced in a manner similar to epithelium cells.

3. *Laminated Adipose Tumor—Cholesteatoma.*

This is a non-lobulated tumor, composed of concentric layers of polyedrous cells, which have a lustre like mother of pearl. It is of the consistence of tallow, and is usually invested with a thin membrane which forms a complete cyst. The fat which it contains is not found exclusively within the cells, but is likewise deposited in their interstices. This form of adipose tumor, was formerly but little, if at all known; and M. Cruveilhier was the first who examined its nature with the attention which it deserves. M. Müller refers to growths described by Dr. Merriman, M. Lepestre, M. Cruveilhier, and M. Dupuytren, which he regards apparently with justice as

instances of cholesteatoma. In Dr. Merriman's case, the tumor was situated between the rectum and cervix uteri—in M. Lépêtre's, it had developed itself in the brain—in M. Cruveilhier's (two) the brain was also the seat of the disease—and M. Dupuytren saw fatty matter surrounding some carious vertebræ in the cancellous structure of the lower jaw, and lining some old urinary fistulæ. M. Müller describes it methodically.

A. General Structure of Cholesteatoma.—The mass is soft semi-transparent, of the colour of white wax, but glistening like mother-of-pearl. It shrinks much when dried, and at the same time loses its whiteness, and becomes of a yellowish-brown colour, though it still retains somewhat of its glistening appearance. It is usually made up of laminæ no thicker than the finest paper, which are in most instances arranged in a concentric manner, as the author has had an opportunity of observing in tumors of the cerebrum. The tumors are generally round, or oval, or of an uneven though rounded form, and on their surface are seen those small nodules represented by Cruveilhier, the layers of which have also a concentric arrangement. Sometimes fragments of a regularly laminated structure are irregularly intermixed, like broken masses of some stratified rock. Such was the nature of a cholesteatoma in the interior of the cranial bones, the external table of which it had caused to bulge outwards, while it had destroyed the internal table. A distinct membrane enveloped this mass, and, indeed, all the tumors of the brain and the cranial bones were covered by a very delicate membrane. There are cases, however, as will hereafter be shewn, in which cholesteatomatous matter is deposited in the interior of cysts with thick parietes, or upon the surface of ulcers.

The laminæ are easily separable with the point of the scalpel. The surface of sections made perpendicular to the laminæ does not present the mother of pearl lustre.

B. Microscopic Structure.—The finer elements of cholesteatoma are a cellular tissue, composed of very minute polyedrous cells, which constitute the laminæ, and a crystalline fat deposited in the interspaces between those laminæ.

“This cellular tissue bears no resemblance to the adipose cellular tissue which exists naturally in the human subject. Its cells are completely polyedrical, like many pigment cells, and it is exactly analogous to the cellular tissue of plants. It is somewhat similar to the polyedrous cellular tissue of the fat of the sheep, but the cells of cholesteatoma are more than twice as small. The average diameter of the cells of cholesteatoma is 0.00081 of an English inch. The cells are as irregular in form as those of the fat of the sheep, some of them being pentagonal others hexagonal, and almost all of them having unequal sides, which irregularity in form is produced by the cells being in contact with each other. A few cells of a more regular, almost dodecahedral form, are occasionally seen. The laminæ, which may be detached from each other with the point of the knife, far exceed in thickness the diameter of a single cell; consequently, by changing the focus of the microscope, other cells are brought into view. The separation of these tumors into laminæ is probably the result of the successive formation of cells and of the deposit of crystalline fat in their intervals.

The individual cells are easily separated, and, when isolated, they are seen to be very transparent and pale, not containing a nucleus in their wall or cavity,

nor a finely granular substance in their interior. It is indeed very difficult to detect any wall to these cells, and consequently there is some doubt whether these bodies are solid or hollow. But the fat cells of the sheep present, when isolated, exactly the same difficulty, although there is no doubt as to their being furnished with walls.

With regard to the substance of the cells, their basis is formed by an animal matter quite distinct from fat. If portions of a cholesteatomatous growth are treated with boiling alcohol or æther, the greater part will remain undissolved, will still retain its laminated arrangement, and will present, although less distinctly, its cellular structure. The same may likewise be observed on heating the substance upon a plate of glass; from which too it acquires, like all animal matter, a brownish tinge. It is probable that a part only of the fat which may be extracted from these growths is contained within the cells.

The crystals situated between the layers of cells are of two kinds, tabular and lamellar; and both forms are easily distinguishable by means of a microscope. The tabular are the most numerous; they are scattered in all directions, and here and there some of them are broken. Their length differs much, in proportion to their breadth; they are often short, broad, and rectangular; but frequently ribbon-like, long and narrow, far exceeding in length the diameter of the cells, and being then very easily broken. The shape of some of the tables seems to be rhombic; but it is not easy to say whether this is really the case, since rectangular tables, if lying obliquely, would resemble rhombs. These tables are not acted on either by acids or alkalies, and probably consist of pure cholesterine. Pure cholesterine, which the author examined under the microscope, was composed almost entirely of rhombic tables.

The other crystalline bodies which the author saw are less abundant, and are collected here and there into little bundles of lamellæ, which, when seen edgewise, might be taken for aciculæ of stearine. If treated, however, with boiling alcohol or æther, it will be seen, as they are deposited on cooling, that their real form is that of lamellæ, pointed at both ends." 160.

c. *Chemical Relations*.—From experiments by M. Barruel it appears, that the portions of cholesteatoma not dissolved by alcohol, possess all the characters of albumen, while the alcoholic solution is made up of cholesterine and stearine.

d. *Of the Seats and Forms of Cholesteatoma*.—All parts of the body appear to be liable to cholesteatoma. It has been met with twice in the substance of the bones; the author saw it once in the bones of the skull, and M. Dupuytren met with a growth probably of this nature in the lower jaw: he also observed it around some carious vertebræ. Leprestre saw it once in the brain, Cruveilhier twice, and the author three times in that situation. When in the brain, it is situated either on the surface of that organ, as in the cases which occurred to M. Cruveilhier and the author; or in its substance, as in the case seen by Leprestre. Dr. Merriman met with it between the uterus and rectum. The author saw it once in a cysto-sarcomatous growth of the mammary gland, and thrice in a subcutaneous cyst. This tumor is most frequently observed in the brain, for, of sixteen cases, six occurred in the brain, three in the bones, and two on the surface of ulcers.

When this morbid growth forms in the bones, it distends and sometimes bursts their shell, a fact which Dupuytren was witness to in the lower jaw, and the author in the cranium.

The forms are either cysts, or on the surface of ulcers.

a. Cholesteatoma in Cysts.—This seems the prevailing form. In internal parts, as in the brain, the cyst is delicate—beneath the skin, as might be expected, it is thicker.

b. Cholesteatoma on the Surface of Ulcers.—Of this there are two instances, one of which came under the observation of M. Dupuytren, who found cholesteatoma lining urinary fistulæ, and the other case was seen by the author. The author found, on examining with the microscope, a cancerous ulcer of the female breast, that its surface was covered with a layer of a peculiar matter, such as he has never seen, either before or since, in that situation. This substance was composed entirely of the fatty matter of cholesteatoma, and presented the ordinary structure of nucleated polyedrous cells.

c. History of the Development of Cholesteatoma.—"It may be assumed," says our author, "with tolerable certainty, that cholesteatoma is destitute of blood-vessels; for not only have they never been seen, either by the author or by any others who have directed their attention to the subject; but, likewise, the growth of a cholesteatomatous mass by aggregation of successive laminæ within cysts, as in cholesteatoma cysticum, suffices to prove that the possession of vessels is not essential to its formation. It must, then, be formed in a manner similar to the yoke cells within the cavity of the yoke bag, and, like the epithelium cells, its increase must take place by the deposit of successive lamellæ. So close, indeed, is the resemblance between the epithelium cells and those of cholesteatoma, that they coincide in all points except in the circumstance that the latter are destitute of a nucleus. The cells of ordinary adipose tissue do, therefore, present less resemblance in the manner of their formation to cholesteatoma than is shewn by the horny structures on the surface of the skin; for the walls of adipose cells are furnished with bloodvessels, which may be demonstrated by minute injections. This apparent difference, however, diminishes on a close examination of the subject; for the original genesis of all cellular structures takes place independently of bloodvessels, in a manner like to the formation of vegetable tissues. This is illustrated in the structure of epidermis and epithelium; the newly-formed cells removing further and further from the seat of their formation, and losing their vitality, in proportion as new cells are produced in the more deeply-seated layers of the epidermis. In the present state of our knowledge the formation of epithelium and of the yolk cells best illustrates the origin and growth of cholesteatoma. It is not probable that the cells of cholesteatoma continue, when once formed, to vegetate like those of other structures, and to produce new cells; for the author never observed in this form of morbid growth young cells encased within older ones, nor any thing approaching to the relation between parent cell and germinal cellule. The cells, when once formed, are moved by the generation of new ones from the place of their original formation, and thus successive laminæ are formed, as in all epithelium structures." 164.

d. Nature of Cholesteatoma.—It is not malignant. When occurring on the surface, or in the substance of an ulcerated carcinoma, it is an accidental complication of that disease. Many cases can be adduced in proof of its not returning after extirpation.

M. Müller refers to seven preparations of cholesteatoma in the museums of Berlin and Halle.

III. OF COMPOUND CYSTOIDS AND CYSTS. SARCOMATOUS GROWTHS.

1. Of Compound Cystoid Growths.

M. Müller refers in terms of commendation to the well-known observations of Dr. Hodgkin on compound serous cysts. Our readers are aware that, according to the doctor, the compound cysts are of two kinds. In those of the first, new cysts develop themselves in the walls of the old one, without growing especially in the direction of its cavity, and without being attached to it by peduncles. A repetition of this process forms a tumor composed entirely of cysts of different sizes.

In the second kind, the new cysts are attached by pedicles to the walls of the parent cyst, into the cavity of which they project. These pyriform growths may proceed from one or from several parts of the parent cyst, and may themselves give rise to tertiary growths. Dr. Hodgkin has detailed the history of this structure with great minuteness. The inner membrane of the parent cyst is reflected upon those of secondary formation. These secondary pyriform pedunculated cysts do not contain merely a serous or mucous fluid like that of the parent cyst, but within them are clusters of new growths, which proceed from one or more points of their internal surface, and occupy their cavities. Sometimes the young cysts are attached to the older ones by a thin stalk; at other times they have a broader basis. Sometimes the quantity of fluid contained in the parent cyst is great in proportion to the size of the secondary cysts which sprout from its walls; in other cases the opposite occurs, and the dilatation of the secondary cysts may go so far as not merely to distend the parent cyst, but even to occasion its rupture. The secondary cysts, too, may be ruptured, and then they appear like follicles pouring their contents into the parent cyst. The membranes of these cysts are susceptible of inflammation, which may proceed so far as to cause the adhesion of the secondary cysts to the parent sac. Suppuration, likewise, may take place in these cysts, and, consequently, pus may be found in their cavities.

M. Müller speaks to the correctness of these observations of Dr. Hodgkin's. But he cannot coincide with him "in his attempt to extend the principle of the formation of compound serous cysts to explain the structure of sarcomatous and carcinomatous tumors. The principle of the development of these latter tumors is, as observations with the compound microscope shew, perfectly different in its character. Their ultimate elements, indeed, are cells, often permanent, so small as to be distinguishable only by employing a high magnifying power; but these cells were never observed by Dr. Hodgkin. These cells, moreover, do not sprout from the parietes of a parent cell, but are developed around nuclei, which are formed either free in the interior of the parent cells, or external to their cavity. Their development does not differ from the development of the tissues in the embryo.

The substance of the walls of a compound cyst is firm, white, often possessed of a satiny lustre, and is composed of regular layers of fibres. The contents of the sac are sometimes a clear fluid, like mucus, at other times they are formed by a pulpy and turbid matter. If tumors of this kind are

preserved in spirits of wine, tabular and rod-shaped crystals may be found in the matter which they contain, as well as granules resembling small vesicles filled with a minutely granular substance.

It is worthy of notice, that the clustered growths which proceed from the interior of compound cysts with endogenous development are, often, almost or altogether solid. Instances of this have frequently come under the author's notice; for instance, in ovarian cysts which were beset internally with clusters of sprouting growths. The interior of these growths was, indeed, soft, but presented no trace of cysts; instead of which it was partly fibrous, and, on a high magnifying power being employed, cells were discovered, such as are found in firm sarcomatous growths; the author, therefore, does not think that the process of development described by Dr. Hodgkin invariably occurs. The same observation has likewise been made by Sir A. Cooper,* with regard to the pedunculated growths sometimes contained in the interior of hydatids of the female breast; for he says that some of them were composed of a cellular tissue, infiltrated with fluid. The converse of the ordinary process may, therefore, sometimes take place, and the pyriform bodies, being first produced, may either remain solid, or become the seat of the development of cysts."

Cysts sometimes contain fungous growths, which proceed from the interior of their parietes.

2. Of *Cysto-sarcomatous Growths*.

The author applies the name of cystosarcoma to such tumors as, while they are principally composed of a more or less firm, fibrous, and vascular mass, are yet invariably found to contain solitary cysts in their substance. The fibrous masses are composed of an albuminous substance, and sometimes contain granules scattered between their fibrils. A person regarding merely the nature of the mass which forms the bulk of the growth, would unhesitatingly refer it to the class of sarcomata; but the presence of cysts is so invariable, and these tumors so often exhibit peculiar forms, as to afford just grounds for forming them into a new species, which, indeed, is rendered more desirable in consequence of the numerous errors to which they have led. The fibrous tissue forms the stroma in which the separate cysts are imbedded. These morbid growths are most frequent in the generative organs; either in the ovaries, or near them, in the testicle, and in the female breast.

M. Müller has seen three forms—the simple cystosarcoma, cystosarcoma proliferum, and cystosarcoma with foliated warty excrescences from its cysts. In cystosarcoma simplex, the cysts contained in the fibrous sarcomatous texture have each their distinct membrane, the inner wall of which is simple, smooth, or at most beset with a few vascular nodules. To this class belong several cases described by Sir A. Cooper as hydatid tumors of the female breast, and likewise some of the preparations in Guy's Hospital, called "cystic tumor of the female breast."

In the second form, the sarcomatous mass is the same, but the cysts

* Illustrations of the Diseases of the Breast. London, 1829. p. 23.

within it contain younger cysts in their interior, which are attached to their walls by pedicles. An instance of this is afforded by the case of Mrs. King, described by Sir A. Cooper. This form of morbid growth is a repetition of the cystis proliferata, but imbedded in a sarcomatous mass, which constitutes the chief part of the tumor; and it may, therefore, be termed with propriety *cystosarcoma proliferum*. The pedunculated offsets from the cysts are hollow, and Sir A. Cooper saw some of them loose in the interior of the older cysts. It would likewise appear from an observation of Sir A. Cooper that the young cysts contain cholesteatomatous matter, for he found their interior composed of several laminæ, easily separable from each other, and presenting a glistening appearance.

The pedunculated bodies may, however, be sarcomatous.

"The third form, *cystosarcoma phyllodes*, differs greatly from the other two. The tumor forms a large firm mass, with a more or less uneven surface. The fibrous substance which constitutes the greater part of it is of a greyish white colour, extremely hard, and as firm as fibro-cartilage. Large portions of the tumor are made up entirely of this mass, but in some parts are cavities or clefts not lined with a distinct membrane. These cavities contain but little fluid; for either their parietes, which are hard like fibro-cartilage, and finely polished, lie in close apposition with each other, or a number of firm, irregular laminæ sprout from the mass, and form the walls of the fissures; or excrescences of a foliated or wartlike form sprout from the bottom of the cavities and fill up their interior. These excrescences are perfectly smooth on their surface, and never contain cysts or cells. The laminæ lie very irregularly, and project into the cavities and fissures like the folds of the psalterium in the interior of the third stomach of ruminant animals. In one instance the author saw these laminæ here and there regularly notched or crenated like a cock's comb. Sometimes the laminæ are but small, and the warty excrescences from the cysts very large, while in other instances both are greatly developed. Occasionally these warty excrescences are broad, sessile, and much indented; others have a more slender base, and somewhat resemble cauliflower condylomata. They are always formed of the same firm apparently fibro-cartilaginous matter as the non-hydatid portions of the tumor. The preceding description has been made from a *cystosarcoma phyllodes* of the female breast, weighing 2½ pounds, which was extirpated by M. v. Graefe, and is now preserved in the museum at Berlin, and is numbered 8906 in the catalogue.

On a microscopic examination of the firm mass, it is seen to have an indistinctly fibrous structure, but to contain neither cells nor cartilage corpuscles. It is very difficult to distinguish the fibrous texture of the mass; and this circumstance as well as the difference in the results of chemical analysis, suffice to distinguish the solid mass of *cystosarcoma phyllodes* from the tumor fibrosus s. desmoides. When boiled for twenty hours it yields no gelatine, and consequently consists of an albuminous substance; but the author never met with any other albuminous body of so great firmness. Whatever may be dissolved by long boiling is precipitated by corrosive sublimate, acetate of lead, tannin, and alcohol, but neither by acetic acid nor by alum. Once the author saw a large mass of cholesteatoma contained free within the cyst of a *cystosarcoma phyllodes*, which had been successfully extirpated by M. v. Brunn, of Coethen, and which was preserved in Meckel's museum at Halle. Tumors of this kind attain an enormous size; hitherto the author has seen them only in the female breast, nor are they even there of frequent occurrence. They are decidedly innocent, occur earlier than it is usual for cancer of the mamma to develop itself, and sometimes they appear even in youth; they have but little tendency to grow to the skin or to the subjacent muscles, and are not attended with retrac-

tion of the nipple. They are not disposed to soften internally, but continue to grow slowly until they have attained an enormous size, when they at length burst, and a very ill-looking suppurating fungus forms upon their surface. Even in this state, however, the operation has been performed with a successful result." 174.

These tumors have been described under the names of *steatoma mammæ*, *carcinoma mammæ hydatides*, *carcinoma phyllodes*, &c. and M. Müller appends some historical notices of the affection.

He adds a short section on the curability of the disease by operation.

M. Müller remarks:—There are many and sufficient observations on record, all of which concur in representing *cystosarcoma* as curable by extirpation, and as having nothing in common with cancer, notwithstanding the extraordinary appearance which its warty excrescences or its laminae exhibit. The case described by Chelius was cured by the operation. The same result followed the operation in the case from which the specimen in St. Bartholomew's Hospital was obtained; and amputation cured all the cases of hydatid tumors of the breast described by Sir A. Cooper. Swelling of the axillary glands is not a common occurrence, and, when it is met with, is the consequence of simple irritation, and subsides after the operation. The extraordinary forms which *cystosarcoma phyllodes* assumes, at once suggest the notion of its cancerous nature; and yet the disease is perfectly innocent, and as far removed from *carcinoma* as are those non-suppurating cauliflower condylomata of the penis, and of the female genitals, which have so often been mistaken for cancerous structures. The author has been fortunate enough to learn the history of a case which came under his own observation; and, likewise, of two others, the preparations from which are contained in the anatomical museum at Halle. In all of these the operation was completely successful. M. Müller adds:

"Although it is a well established fact that these forms of *cystosarcoma* are innocent, yet it must not be imagined that the appearance of cysts in a parenchymatous tumor necessarily excludes *carcinoma*, or a malignant nature. Indeed, just as cysts may be developed in every part of the organism, so it is quite possible that they may be formed in a carcinomatous structure. Among the many cases of innocent hydated tumors of the breast, Sir A. Cooper mentions one which was malignant, namely, a combination of cancer and hydatids. Moreover, the occurrence of *carcinoma alveolare* in the breast, although rare, has been observed by the author, and may lead to mistakes. In a *carcinoma reticulare*, the author saw part of the tumor presenting the ordinary structure of *carcinoma alveolare*, and containing cells filled with jelly. These cells might very easily have been mistaken for ordinary hydatids.

Carcinoma of the breast never attains that enormous size which *cystosarcoma* of the female breast sometimes reaches, before it passes into the open state. In Chelius' case the tumor had existed for ten years before the operation was performed, and a *cystosarcoma proliferum* had lasted for fourteen years before it was extirpated by Sir A. Cooper. The development of the tumor at a period of life when cancer *mammæ* is infrequent, its tardy progress, the enormous size which it attains without causing pain or producing, at the most, only very slight discomfort, and the fluctuation more or less distinct at the part where some cyst is situated, are points which, even before an operation, may lead to a tolerably certain diagnosis of these growths.

Enchondroma and *cystosarcoma* are the only forms of benignant tumor of the mammary gland which have hitherto come under our notice. The female breast

is liable to innocent tumors of other kinds, which will hereafter claim our attention; as the albuminous and gelatinous sarcoma, and the fibrous tumor which in the breast, as well as in the uterus, is susceptible of transformation into bone." 182.

This completes our account of the part before us. We have given it in full and in detail, as we were anxious to place before our readers the opinions and observations of so accurate a pathologist as well as physiologist, on so difficult a subject. We shall return to it when the next part appears, and in the mean time we will remark that the work should be in the possession of every physician and surgeon who affects to practise with dignity and an expectation of success.

II. The length to which we have gone in pursuing the investigations of M. Müller into the nature and properties of carcinoma, must prevent us from entering so fully on the examination of the article "Cancer," in the *Cyclopædia of Practical Surgery*, as its merits could justify, and we should otherwise have done. The author, Mr. Spencer Wells, has bestowed on it great pains, and no less discrimination; and we think it offers a very favourable sample not only of his labours, but of the *Cyclopædia* itself.

We cannot pass it by with merely a barren encomium. There are many parts of it from which we may extract particulars necessary to complete the view of which M. Müller's work has offered us so large a portion. Over these parts we shall run, and if our notice of them is unconnected it is for the reason we have stated.

Nosological Position of Cancer.

Mr. Wells insists on the propriety of employing cancer or carcinoma as the generic term, scirrhus and encephaloid formation being only species. To these he adds, in accordance with the researches of Laennec, Otto, Cruveilhier, and Müller, "colloid" growths.

"The union of these morbid structures into a distinct class is not a mere nosological artifice: it is manifest that the formations, to which we propose to apply the generic term cancer, possess characters entitling them to be grouped together and separated from all others to which the frame is exposed. They agree *anatomically*, for they are all composed of a containing and a contained part forming a combination without its counterpart in the natural structures; they agree *chemically*, for they are all distinguished by the vast predominance of albumen in their composition: they agree *physiologically*, for they all possess in themselves the power of growth and of extension by continuity of tissue, that is, of assimilating to their proper substance the most heterogeneous materials an inherent tendency to destruction and the power of local reproduction; they agree *pathologically*, for they all tend to affect simultaneously or consecutively various organs in the body, and produce that depraved state of the constitution known as the cancerous cachexia. Their title to be united is quite as strong in respect of practical medicine and surgery, as in respect of scientific pathology, a consideration of the very highest importance. As respects the name to be given to the genus, cancer or carcinoma is clearly the best; to limit these terms to one particular tissue, when others possess the very properties on account of which they were originally employed, is a palpable contradiction."

To this no rational objection can be urged. It is the expression of the present advanced state of opinion. The following table seems to us a very good and useful one. It will assist the pathological student, and relieve him of the embarrassment which an over loaded nomenclature has given rise to. As Mr. Wells remarks, it will be seen from this table that cancer is synonymous *anatomice* with adventitious heterologous tissue. The fact of its being a tissue, that is, of its possessing structure, separates it unequivocally as a morbid product from others belonging to the same class, for example, pus and tubercle. The heterologous material of all carcinomatous formations is organizable, susceptible of vascular development, and hence of undergoing all the changes of increase and decay consequent on such susceptibility.

Family.	Class.	Order.	Genus.	Species.	Varieties.	Synonyms of the Species.
Adventitious Formations.	Heterologous formations.	Tissues.	Cancer or Carcinoma.	Encephaloid.	Common vascular sarcoma } <i>Abernethy.</i> Mammary sarcoma ? Solanoid. <i>Recamier, Zang.</i> Nephroid. <i>Idem.</i> Napiform. <i>Idem.</i> Carcinoma fasciculatum vel hyalinum. <i>Mueller.</i> Fungus Hæmatodes. <i>Hey.</i> Hæmatode Cancer. <i>Auct. Gall.</i>	Spongy or ossivorous tumour. <i>Rusych. Palletta.</i> Struma fungosa (testis). <i>Callisen.</i> Spongoid inflammation. <i>Burns.</i> Milt-like tumor. <i>Munro.</i> Medullary Sarcoma. <i>Abernethy.</i> Cerebriform disease or cancer. <i>Laennec.</i> Pulpy testicle. <i>Baillie.</i> Carcinus spongiosus. <i>Good.</i> Carcinoma spongiosum. <i>Young.</i> Fungoid disease. <i>A. Cooper, Hodgkin.</i> Medullary fungus. <i>Maunoir, Chelius.</i> Acute fungous tumor. <i>C. Bell.</i> Medullary cancer. <i>Travers.</i> Cephaloma. <i>Hooper, Carswell.</i> Carcinoma medullare. <i>Mueller.</i> Soft cancer. <i>Auct. Var.</i>
					Pancreatic sarcoma ? <i>Abernethy.</i> Napiform, } <i>Recamier.</i> Chondroid, } Lardaceous tissue. <i>Auct. Gall.</i> Carcinoma Reticulare. <i>Mueller.</i>	Carcinomatous sarcoma. <i>Abernethy.</i> Carcinoma scirrhusum. <i>Young.</i> Scirrhus cancer. <i>Travers.</i> Scirrhus. <i>Carswell.</i> Carcinoma simplex vel fibrosum. <i>Mueller.</i> Stone cancer. <i>Auct. Var.</i>
				Colloid.	Pultaceous cancer. } <i>Cruveilhier.</i> Pearly alveolar ditto.	Areolar gelatiniform cancer. <i>Cruveilhier.</i> Carcinoma alveolare. <i>Mueller.</i> Gum cancer. <i>Hodgkin.</i>

The heterologous character of carcinoma distinguishes it too from the analogous adventitious growths, as fatty, fibrous, and cartilaginous tumors. Mr. Wells, however, uses the terms analogous and heterologous in reference to external, not to microscopical characters.

Mr. Wells divides his article into two parts; devoting the first to the subject of cancer in general, in the second describing the disease as it occurs in those tissues and organs in which it is likely to come under the notice of the practical surgeon.

We pass by the *anatomy* of encephaloid disease, scirrhus, and colloid, and stop at their *physiology*.

In treating of the *Physiology* of cancer, Mr. Wells judiciously passes over, or very lightly alludes to, many of the ridiculous theories promulgated at various times. He examines more particularly the hypotheses of Hodgkin, Cruveilhier, Carswell, and Müller.

On that of Dr. Hodgkin we need not speak, as it has been sufficiently examined and objected to. Our readers, perhaps, are less familiar with the opinions of Cruveilhier, and we shall therefore notice them.

“M. Cruveilhier’s doctrine embraces two essentially distinct propositions. First, he regards all heterologous formations, ‘as the exclusive result of a successive deposition of morbid products in the cellular element of organs;’ he believes that ‘this cellular element is alone affected; that the proper tissue of organs is in itself incapable of undergoing any organic lesion, except hypertrophy and atrophy; that at first rendered hypertrophous by the state of irritation existing in the neighbouring cellular membrane, these proper tissues subsequently become atrophous, and finally disappear in consequence of the pressure they undergo from the diseased formation.’ But this unalterableness of composition of the organic tissues is the least important part of the doctrine; for, secondly, ‘it results from his researches that the formation of cancer, like all nutritive phenomena, physiological and morbid, takes place in the venous capillary system; that from it the morbid products are poured into the cellular membrane, either by exhalation or through lacerated openings.’ This latter proposition, as it affects cancer, is evidently only a part of his more general theory, according to which the various phenomena of nutrition, secretion, and inflammation, are accomplished, not as has heretofore been believed in the arterial, but in the venous capillaries.”

Mr. Wells remarks that, much as M. Cruveilhier insists upon the doctrine that carcinoma occurs primitively and invariably in the seat he has assigned to it, yet the only fact that he advances in support of it is the occurrence of carcinomatous matter in the veins.

From the full account which we gave, at the time of their publication, of Dr. Carswell’s *Fasciculi of Morbid Anatomy*, our readers may perhaps remember his opinion—that, carcinoma originates in three positions—in the molecular structure of organs as a product of nutrition; on free serous surfaces, as a result of secretion; and in the blood. It is in the latter, indeed, that Dr. Carswell places the real site of cancer, and the hypothesis is one of the most important description. Mr. Wells, therefore, collects what is known upon the subject.

The earliest careful observations, he says, respecting the presence of cancerous matter in the vascular system appear to have been by M. Velpeau. In 1824 this inquirer read an essay to the Academy of Medicine, containing two cases related with much precision. In one of these an encephaloid mass appeared in the vena cava communicating with similar structure in the kidney; and an enormous coagulum extending from the iliac veins through the cava inferior to the right auricle, presented from place to place the characters of encephaloid matter of varying firmness. The coagula in the heart had apparently formed after death, yet in one of them, placed between the walls of the ventricle and the tricuspid valve, was contained “some substance of purulent or encephaloid aspect, like that contained in the kidney.” In 1829 M. Andral announced his having discovered carcinomatous matter in

the trunk and minute ramifications of the pulmonary artery; in other instances, in the branches of the vena porta, &c. In the same year M. Cruveilhier, in describing a case of cancer of the uterus and vagina, stated that on cutting the latter membrane slantingly, he ascertained, with the aid of a lens, that the venous areolæ of the vaginal mucous membrane were crammed with encephaloid easily expressible from their interior.

These facts all prove the presence of carcinoma in the interior of the venous system. The different observers differed much in their conclusions from these facts. But Dr. Carswell goes farther than any.

"He affirms not only that the morbid production may be discovered in vessels having no direct communication with an organ affected with the same disease (as when confined to a small extent of the vena porta), but that there are cases in which the venous blood alone is found to be the seat of the morbid accumulation. Of the first of these observations we readily admit the accuracy, but it by no means disproves the fact of venous absorption. There does not seem to be any direct communication between the parenchyma of the lungs and the bones of the extremities; yet the celebrated experiments of M. Cruveilhier show that a single globule of mercury introduced into the medullary cavity of the femur may be detected weeks after in the pulmonary tissue. Nay more, they have proved that mercury, introduced into any part either of the general or portal venous systems, may reach in the first instance the capillaries of the liver, in the second those of the lung. With respect to the second observation, we can only say, that among a vast number of post-mortem examinations, conducted by men familiarized with such researches, we have never seen a case of the description referred to, we have never heard of one, and we have in vain searched periodical works for details demonstrating the reality of its occurrence. Were the fact substantiated it would furnish strong evidence of a *primary* cancerous alteration of the blood, provided the adjoining venous structure were shown to be wholly unimplicated; but while unsupported by a full narrative of the cases from which it professes to derive the doctrine of such alteration, no matter how eminent the individual by whom it is adopted, can only, we apprehend, be regarded in the light of an hypothesis. The fact that the heterologous substance is not discovered in the arterial system (Cruveilhier's statement [p. 594] requires substantiation) is accounted for by Dr. Carswell by supposing that the contractile power of the arteries prevents stagnation of their contents: how far this may be considered an answer to an obvious argument against his theory, we are unprepared to say; it is certain that it is far from convincing.

Further, as Dr. Carswell regards the deposition of carcinoma, through the processes of nutrition and secretion, as the result of its *separation* from the blood, cancerous vitiation of that fluid, preceding the origin and co-existing with the growth of the local malady, is a *sine quâ non* of the development of the latter: according to him the blood is, in a word, the sole primary seat of the disease. Hence the material element of the affection is in circulation in cases, for instance, of scirrhus of the mamma, which remains almost stationary for years, is unattended with secondary formations in other parts of the frame, and gives rise to no marked constitutional disturbance. Now this idea is by others rejected as inadmissible; can we readily comprehend, they allege, how blood holding cancer in suspension can furnish the materials of normal secretions and perform its functions in such manner as to cause no perceptible deviation from the standard of health? How comes it again, it is urged, if this doctrine be well founded, that after the removal of a cancerous tumour the process of cicatrization frequently goes through its stages with regularity, though when the patient dies, one or more viscera are found affected with the disease in such manner as to leave little doubt, in some cases none, that the morbid growths discovered in them were in existence before the performance of the operation. If these facts are recon-

cible with the theory espoused by Dr. Carswell, he has at least failed to make manifest their compatability therewith. For our own part, while we distinctly avow that the difficulty of explaining the apparent contradictions involved in this doctrine furnishes no *proof* of its unsoundness, we regret it as unestablished by experience.

Again, though we look upon it as almost demonstrated that cancerous matter found in the veins has in the majority of cases come there by absorption (see the section on Pathology), yet we are by no means desirous of upholding an exclusive opinion on the matter. Facts well observed prove, in the first place, that growths external to those vessels, in some instances perforate their coats, protrude into, and extend laterally in, their interior. Nor do we deny the possible conversion of coagulated blood into encephaloid; we simply alledge that such transformation is as yet unproved. Thirdly, published cases tend to prove the occasional production of carcinoma by the coats of the veins; circumscribed tumors are sometimes found attached to the walls of these vessels by a simple or multiple pedicle (not unfrequently dilating the vein, as M. Cruveilhier observes, into an ovoid ampulla simulating a cyst). These tumors are evidently in organized connexion with the vascular tunics—a fact arguing in its favour, though it by no means demonstrates their production thereby."

Mr. Wells observes that it may fairly be inferred that the primary seat of carcinoma is the intervascular interstices of all the organized tissues and parenchymata, in rare instances possibly free serous surfaces and the interior of the veins. Wherever there are capillary vessels composing a nutritive or secretive apparatus, cancerous matter may be produced; that it may be sometimes retained in these may reasonably be supposed, but there is at present no proof of the fact. Secondly, the proximate cause of the formation consists in a perversion of the facts of nutrition or secretion. The state of the blood is a difficult problem. Possibly, at the earliest period, it may not preserve its perfect normal constitution; and probably, when secondary cancerous formations occur, its state must exercise a material influence in their production or their growth.

A very full account is given of the *growth* of carcinoma. Our readers are aware that Müller contends that the microscopical elements of cancerous growths and their mode of propagation are identical with those not only of benignant tumors, but of the normal embryonic tissues. He therefore infers that carcinoma is not a heterologous formation. And, in the sense in which the term *was* received, there cannot be a doubt, that, presuming his premises to be correct, he is right. But Mr. Wells remarks that such identity simply shews that the heterologous character, visible and palpable as it is, is produced not by the nature, but by the mode of combination and arrangement of the ultimate physical elements of the diseased growth. As well might it be contended that calomel and corrosive sublimate are not heterologous to each other, because they are both composed of atoms of chlorine and mercury. Our readers will perceive that the question is merely one of words. It is only necessary to define what heterologous shall signify to settle it.

Effects of Cancer on Adjoining Parts.

A complete account is given of these, and we feel disposed to notice it. These effects are by no means uniform.

a. In some situations cancerous deposits may acquire considerable volume

without apparently influencing the substance of the part in which they are formed. This is observed in the lung and in the encephalon, even when no cyst intervenes between the abnormal and natural tissues; hundreds of tumors are sometimes found in the liver, separated by perfectly normal structure.

b. A very simple effect is *condensation* of the surrounding substance. This is familiarly seen in the condensation of the adjoining cellular substance by subcutaneous tumors. Aided in some instances by slight hypertrophy of the cellular laminae, a pseudo-cyst investing the morbid growth is thus developed. The formation of this natural barrier between the diseased and healthy tissues, more frequently observed in the case of encephaloid than of scirrhus, no doubt helps to defend the latter from infiltration with the morbid matter. The substance thus cut off, as it were, from surrounding parts, has less tendency to contract adhesions with them.

c. These tumors produce *mechanical effects* regulated by their size and position. Thus if developed around the vena porta, they interfere with the circulation in that vessel and induce ascites, &c.

d. *Discoloration* of the neighbouring parts is sometimes effected in a manner as yet unexplained: thus the fat adjoining mammary carcinoma assumes a yellowish saffron tint. In advanced stages of cancer in the same organ, the integuments acquire a dingy green or olive hue, ascribable, as Dr. Hodgkin mentions, to changes in the venous blood.

e. Cancer, when so situated as to oppose the onward movement of the contents of hollow viscera, leads to *hypertrophy* of the muscular apparatus behind the obstruction. Thus in anal carcinoma the muscular tunic of the rectum undergoes thickening.

This is a mere consequence of the increased call on muscular exertion.

f. Another change of nutrition occurs. In scirrhus of the mamma, as has been observed by Sir C. Bell, Scarpa and others, the proper tissue of the gland occasionally suffers *atrophy*; in such manner that a breast, in which an heterologous growth is encased, hardly or not at all exceeds its healthy fellow in bulk. In other cases, on the contrary, the diseased organ undergoes general enlargement, or parts of it may be atrophous and others tumefied. The first of these cases is termed by Recamier *hypertrophous*, the second *atrophous engorgement*: the combination of the two states produces inequalities and bumps.

g. Carcinoma sometimes produces *absorption* of the part on which it presses. This is exemplified in the progress of meningeal cancerous growths which, after producing perforation of the cranium, sprout out through the opening.

h. *Serous infiltration* is frequently observed round subcutaneous and glandular tumors; and it is stated by Cruveilhier, that in cases of cancer of the cylindrical bones, the medulla is not unfrequently saturated with serosity.

i. *Inflammation* almost invariably occurs sooner or later in the tissues investing carcinoma: it is either eliminatory or not in its effects. As instances of the latter may be cited, gelatiniform softening sometimes produced in the cerebral tissue subjacent to meningeal cancer; peritonitis spreading from the seat of superficial carcinoma of the liver and giving rise to ascites, &c.

j. *Fibrous transformation* is sometimes observed. Cruveilhier has found

the hepatic tissue between cancerous tumors converted into true fibrous substance, and relates a case of mammary carcinoma, in which the pectoralis muscle had undergone a similar change of structure.

k. The extension of the disease to contiguous textures by *infiltration* occurs in the case of the three species, but not with the same frequency. Encephaloid has been by some considered more prone to push the adjacent parts aside, than to convert them into matter like itself: Abernethy considered this a fact of sufficiently constant occurrence and importance to warrant a complete separation of scirrhus and medullary sarcoma. But it is far from unusual for encephaloid of the cellular membrane of the limbs to spread to the adjoining tissues. Cerebriform growths originating under the peritoneum spread to the bones of the pelvis, and even of the thigh: this progressive destruction even of the hardest tissues was by Ruysch esteemed so important that he named the disease ossivorous tumor. On this point indeed, there is much difference of opinion amongst authors. But there can be no question that encephaloid, though it does invade contiguous tissues, is not so prone to do so as scirrhus. The extension of scirrhus to contiguous textures is a very constant phenomenon; as it spreads, the scirrhus growth loses its circumscribed, rounded, moveable character. Perforation of the hollow viscera consequent on conversion of their walls into cancerous matter is an occurrence familiar to the clinical observer. Such destruction of the recto and vesico-vaginal septa forms one of the most deplorable epiphenomena of uterine cancer.

l. Mr. Wells passes in review the various modes or degrees in which the different tissues are involved during the spread of cancer. The *albugineous* tissues generally are remarkable for their power of resisting cancerous infiltration: a fact illustrated by the effect of fasciæ on these growths. The *arterial tissue* in connexion with carcinoma commonly remains unbroken for a length of time, while the investing textures undergo rapid destruction. But that the arteries are not always spared, appears from their occasionally giving way with dangerous facility, when ligatured in the immediate neighbourhood of cancerous formations. Hematemesis has followed erosion of the splenic or coronary arteries in cancer of the stomach, &c. The adjoining arteries are sometimes dilated; Cruveilhier has seen nameless ramusculi running to a mammary cancer acquire the caliber of the radial. The *veins* in communication with these products undergo singular enlargement; but a similar effect is produced by other tumors. Numerous observers have ascertained that these vessels become morbidly friable, a fact particularly insisted on by Recamier. And cancerous matter may be found in their interior. The condition of the adjoining *nerves* varies. Their tissue may retain all its normal characteristics; it may be absorbed from pressure; become cancerous; or the nervous substance may alone be absorbed, while the neurilemma, thickened and indurated, assumes the characters of fibrous tissue. They have been more commonly observed to undergo encephaloid than scirrhus infiltration. Breschet has, however, found the areolæ of their tissue infiltrated with a liquiform matter resembling that of scirrhus. The *excretory ducts* of glands are sometimes stuffed with the morbid matter: the ureter has thus been found partially or wholly obstructed.

The *Pathology* of carcinoma is treated at some length, and with ability. Mr. Wells first adverts to the greater frequency of the disease in some organs

than in others. After noticing the various hypotheses upon the subject, hypotheses that flatly contradict each other, he concludes very fairly, that we know nothing of the matter.

Then Mr. Wells pursues the *Anatomical course* of the disease. After observing that it may be limited to one organ throughout, he remarks that it may spread to a multitude of parts, which are then said to be affected with *secondary cancer*.

The mechanism of transmission probably varies as the parts contaminated are in proximity or remote. In the former case the propagation is effected by the progressive interstitial deposition or infiltration of the morbid matter in tissues naturally continuous or contiguous; or parts simply placed in juxtaposition or approximation may, according to Dr. Hodgkin, without the pre-establishment of adhesion, contaminate each other. As instances of the latter mode of contamination, cases are referred to, in which an ovary, the mesentery, or the liver being the seat of a malignant tumor, the parts in contact with it, whether convolutions of intestine or abdominal parietes, become similarly affected.

The implication of remote parts seems only possible through the medium of the lymphatic or the venous systems.

"The condition of the lymphatic structure in communication with a cancerous tumor varies. In some cases it is, to all appearance, normal; in the vast majority of instances, when the disease has existed for any length of time, the glands are affected with simple or cancerous induration, while the vessels leading to them are either filled with the heterologous matter, or, as is more common, no modification is discernible in their anatomical state. Now when the tubes are themselves loaded with cancerous substance, and are, for example, traceable so loaded from the diseased organ even to the thoracic duct, without any evidence existing of the matter being a product from the walls of the tubes themselves, the implication of the lymphatic system is evidently the result of absorption. But when the glands are cancerous and the connecting tubes in the natural state, the condition of the former is not thus so satisfactorily explicable. The difficulty may, it is alleged, be obviated by supposing the secondary formation induced by congestion of the glands, itself excited by the irritation attending the progress of the primary growth. We are at a loss to understand why the vessels themselves, in closest proximity to the disease, should not suffer, were this conjecture well-founded: the analogy of common or venereal irritation will not fairly apply here. Maunoir observes that in the advanced stage of encephaloid, lymphatic glands unconnected with the tumor by vessels sometimes become affected, and Sir A. Cooper has seen the axillary glands of the opposite side diseased in cancer of the mamma. In these cases the lymphatic carcinoma must be admitted to occur independently of the existing growths, unless the statement of Scarpa, that the cancerous ichor sometimes passes circuitously along the anastomosing lymphatic vessels be well founded."

We confess that this seems to us straining at gnats. It is easy enough to conceive the arrest of carcinomatous matter, and the induction of carcinomatous action in the intricate tissue of an adenoid gland, when the open channel and simple texture of the inferent or of the efferent vessels have favoured their escape. It is, we think, going out of the way for a difficulty, to reject direct contamination, when glands in direct communication with a cancerous formation are affected with it.

"As it is necessary to admit that the process of absorption, as a part of nutrition, is constantly going on in cancerous growths, it may be inquired why dis-

tant contamination does not occur from their earliest deposition, A parallel case may be cited. The pyogenic membrane or enclosing cyst of abscesses is by all admitted to be an absorbing and secreting agent, yet in how few cases of abscess does pus find its way into the circulation. Both facts may be explained by supposing that these vessels normally exercise a decomposing action on the purulent or cancerous matter, which they cease to do on some occasions, admitting it then into their interior with its natural properties."

It is obvious that *amount* as well as *nature* of absorption may vary under different circumstances, and the quantum of morbid matter necessary to produce secondary contamination is what we have no means of measuring.

"But the occurrence of secondary carcinoma in localities free from lymphatic communication with the seat of a primary growth, remains to be explained. In these cases it appears hardly possible to doubt that the venous system is an agent of translation: while M. Cruveilhier affirms that such is the case with all the earnestness of conviction, Müller simply admits the possibility of the absorption and diffusion of the germinal nuclei giving rise to secondary formations. If it be true that we still want the material demonstration of this—if no investigator has yet discovered the cancerous matter actually *in transitu* with the blood in the veins leading from one diseased organ to another—still the following arguments may be adduced as affording strong presumptive evidence in favour of the reality of such transmission. 1. Cancerous matter exists in a multitude of cases in the veins of the diseased part; now this is obviously a most favourable circumstance for its circulation with the returning blood. 2. The rapidity of the successive development of the disease in different organs, sometimes observed, seems only producible by the agency of a fluid which, like the blood, pervades them all. 3. The liver and lung, the two organs in which foreign bodies introduced into the circulation are almost invariably observed to stagnate, are by far the most frequent seat of the secondary development of carcinoma. 4. Secondary cancer in the liver and lung occupies the same elementary seat as pus formed in those organs consecutively to the existence of suppuration in a distant part of the frame (metastatic abscesses). The granules of the former organ are in both instances the element affected. Dr. Carswell, arguing for the primary vitiation of the blood, affirms that the fact of absorption is disproved by minute anatomical details; but gives us no information as to the presumed nature of these. Dr. Hodgkin is persuaded that the consistence of the matter is sufficient evidence 'of its not having been transported along the vessels in which it is found,' (of course this applies *à fortiori* to secondary tumors in the parenchymata) and believes its existence in the veins and lymphatics to be the result of 'inflammation of the malignant growth and the natural structures connected with it.' The fact of inflammation occurring under these circumstances is unestablished; we shall presently recur to the objection founded on the consistence of secondary formations. According to Müller the presence of cancer in the venous capillaries 'appears simply to indicate inflammation of those vessels:' a notion discordant with the well-established fact, that the morbid matter is found in perfectly healthy portions of the venous system.

Nevertheless some apparently serious objections may be raised to the doctrine of venous transmission. If such, it may be urged, be the mechanism of the production of carcinoma in distant organs, why is such production not a constant phenomenon? why should cancerous disease ever terminate the existence of individuals without having manifested itself *materially* in more than a single spot? A satisfactory answer cannot in the present state of the science be easily found. It must, however, be recollected, that the presence of the morbid substance in the veins has not been proved to be a constant condition of its existence in every form of the disease; secondly, that when the minute veins are blocked up, the circulation in the portions of tube immediately in front of the obstruction can

only go forward by anastomotic communications; and that, thirdly, the morbid substance is in many instances completely cut off from the general circulation by sanguineous concretions. Of this last fact published engravings of carcinoma furnish examples. Another objection to this doctrine may appear in the multitude and large size of secondary formations; it is physically impossible, it may be alleged, that these should have been the produce of absorption from a mass, itself smaller than many among them, and which at no period of its growth suffered apparent diminution of bulk. But it is not meant in the remotest degree (and this is the answer to those who object to the origin of secondary carcinoma in absorption on the score of its consistence) that consecutive formations are composed of the actual substance of the primary mass, though even this does not seem, from the evidence of infinitely rare cases, to be impossible; the micrography of cancer, shows that the translation and deposition of a few cells only from the original nidus might lead to the development of the largest mass; each cell is in itself *the possible embryo of a tumor*. There is yet another fact apparently subversive of the notion of venous transmission. The detritus and ichor of carcinoma have been injected into the veins of animals, but no development of cancerous structure has resulted from the experiment. Granted, but this simply proves—and it does so perhaps as conclusively as any other adducible argument—the absolute necessity of predisposition for the production of the disease; without this even its material constituent manifests itself only as an irritative agent.”

On the whole, it appears to us, that, as in the case of secondary abscesses, the arguments as well as the facts in favour of venous transmission, preponderate; and if a cachexia has led to the original formation of the carcinoma, that cachexia must probably be greatly aggravated by influx into the system of carcinomatous particles through the lymphatics and the veins.

Mr. Wells observes that the *condition* of the solids and fluids of subjects dying with cancerous disease has scarcely been investigated. Lymphatic and visceral secondary contamination are the only lesions recognised as attendants on the progress of disease.

“M. Louis found that the mean volume of the heart was less in subjects dying from cancer, especially of the stomach and uterus, than in those succumbing under any other disease; and that while the aorta measures 34½ lines (Fr.) in width at the edge of the sigmoid valves in subjects dying of acute diseases between the ages of 30 and 40, and 32 in the victims of phthisis, it only measures 30 in carcinomatous subjects of the same age.

Tubercle and cancer rarely co-exist. In fifty-two autopsies of cancerous subjects collected from various sources we found but three examples of the anatomical characters of phthisis. The difference of the ages at which the two diseases are most prevalent would lead us to expect a result of this kind, independently of any influence which the formation of one may have in excluding that of the other form of morbid matter. It is worthy of remark, that in the three instances of co-existence referred to, the cancerous affection was of the scirrhus species, and the mean age of the subjects thirty-seven. The absence of tuberculous diseases in all the cases of encephaloid (thirty-one in number) argues strongly against the opinion of those who either consider the latter allied to scrofula, or with Mr. Travers actually regard it as cancer modified by a strumous constitution: indeed we have never yet met with a solid argument in support of this doctrine.”

We think Mr. Wells rather positive in this instance. The analogy, such as it is, between encephaloid and scrofula, has always seemed to us mainly to consist in this—that encephaloid, unlike scirrhus, affects the young—and that, it is very often witnessed in persons of a scrofulous appearance. These are not very conclusive arguments, it is true.

Mr. Wells has devoted considerable attention to the *etiology* of cancer, and the details which he has entered into are both instructive and interesting. Indeed, this may be regarded as the best part of the article.

a. Contagiousness.—Mr. Wells remarks, that it has, till very lately, been supposed that cancer was inoculable, or even infectious. "The grounds for the belief consisted on the one hand of a few ill-authenticated statements in the older writers respecting the development of the disease, in persons presumed to have been previously healthy, as a result of close and habitual contact with cancerous subjects; on the other, of an experiment by Peyrilhe, in which that surgeon introduced some cancerous matter under the skin of a dog, and produced, as he implies, a carcinomatous ulcer. Admitting the authenticity of the first order of facts, they can only prove the fact of coincidence. As to the experiment of Peyrilhe, the only ascertained results were violent inflammation and gangrene; the ultimate effect was not known, as the animal was lost sight of.

The accurate observations of modern pathologists have settled this question in the negative. First, Alibert, Bielt, and several pupils of the Hôpital St. Louis inoculated themselves with the ichorous discharge of cancerous ulcers without suffering any particular effect from the operation: Secondly, Dupuytren introduced pieces of cancerous tissue into the stomachs of animals, and injected the matter from ulcers into the veins and splanchnic cavities without producing any result except those caused by irritating substances generally: Thirdly, among a considerable number of men who had habitual intercourse with women affected with ulcerated cancer of the cervix (of which the existence was established by post-mortem examination) not one presented the slightest symptom of such disease (Bayle): Fourthly, surgeons have frequently wounded themselves in the extirpation and dissection of cancerous growths, without suffering in consequence from carcinomatous disease. (Jäger.)

We would observe, that it does not follow, because the disease is not communicated in certain experiments, that long continuance in the same air, and close communication with a patient labouring under cancer, would not predispose to that complaint. It has been observed by modern surgeons, as well as by old ones, that females who have tended on others labouring under cancer, have been so frequently affected as to raise a fair suspicion of something more than a coincidence. We suppose that Mr. Wells will hardly deny the frequency with which the wife of a phthisical husband, or husband of a phthisical wife, becomes the victim of phthisis. Yet we are not aware of any facts which prove the direct communication of phthisis by experiment, nor is it at all likely. We have lately seen a case which would seem to show the direct transmission of cancer. A gentleman had malignant ulceration of the penis and in the groins, and died of it. His wife was attacked with similar ulceration in the vagina. We would not, therefore, discard the notion of infection as altogether inadmissible.

Age.—The different species of carcinoma may originate at every period of existence. In a remarkable case described by Billard, development of scirrhus had taken place in the heart during intra-uterine life; under the head of Meningeal Encephaloid we shall have occasion to refer to two cases in which that affection existed at birth; and Mr. Travers has figured a remarkable specimen of congenital encephaloid of the eye observed by himself and Sir A. Cooper

when the infant was eight months old; at birth the eyeball was as large as a walnut. M. Cruveilhier has, on the other hand, known uterine cancer manifest itself at the advanced age of eighty-four. The general sense of authors on this point, however, is, that the disease rarely occurs in early life, seldom originates in old age, and is especially frequent in both sexes between the ages of thirty-five and fifty."

To test this, Mr. Wells has examined the returns of deaths supplied to the Registrar-General, under the late Registration Act. He has accordingly compiled a table from twelve hundred cases.

TABLE
*Shewing the absolute mortality from Carcinoma in both sexes
and at all ages.*

AGE.	MALES.	FEMALES.	BOTH SEXES.
1 month			
2 " ..	..	.. 1	.. 1
3 and under 6	..	.. 1	.. 1
6 " 9			
9 " 12			
Years..			
1 " ..	2	.. 1	.. 3
2 " ..	1	.. 4	.. 5
3 " ..	..	.. 1	.. 1
4 " ..	..	.. 1	.. 1
5 and under 10	3	.. 2	.. 5
10 " 15	1	.. 4	.. 5
15 " 20	3	.. 5	.. 8
20 " 25	4	.. 2	.. 6
25 " 30	1	.. 13	.. 14
30 " 35	6	.. 23	.. 29
35 " 40	15	.. 43	.. 58
40 " 45	19	.. 77	.. 96
45 " 50	23	.. 98	121
50 " 55	34	130	164
55 " 60	35	120	155
60 " 65	44	110	154
65 " 70	45	.. 88	133
70 " 75	35	.. 69	104
75 " 80	30	.. 49	.. 79
80 " 85	16	.. 28	.. 44
85 " 90	1	.. 8	.. 9
90 " 95	2	.. 1	.. 3
95 and upwards	1	..	.. 1
Totals..	321	879	1,200

And we subjoin another table, calculated on the preceding, corrected by the Population Estimates of Mr. Rickman.

TABLE

Shewing the proportion of deaths from Cancer in 1,000 living of each sex at the different ages.

AGES.	MALES.	FEMALES.	MEAN.
Under 5	.006	.017	.012
5 and under 10	.007	.004	.006
10 " 15	.002	.010	.006
15 " 20	.009	.017	.013
20 " 30	.010	.024	.017
30 " 40	.058	.152	.105
40 " 50	.140	.983	.561
50 " 60	.290	1.066	.678
60 " 70	.636	1.192	.919
70 " 80	.935	1.421	1.178
80 " 100	1.207	.973	1.089
All ages . . . .	.103	.245	.174

Mr. Wells observes that this table demonstrates the inaccuracy of the commonly received opinion, that the tendency to cancer reaches its maximum between the thirty-fifth and fiftieth years. The mortality, on the contrary, goes on steadily increasing with each succeeding decade until the eightieth year. The mortality from the disease is lowest at the same period of life as the general mortality from all causes indiscriminately, namely, from the tenth to the fifteenth year. "The law of mortality," he goes on to remark, "differs strikingly in the two sexes; the most general character of this difference being the greater regularity of increase with advancing age among males. Passing over the first twenty years, at which period the number of cases is probably too small to admit of very useful comparison, we find, it is true, that the number of deaths from æt. 30 to 40 is in both sexes about six times greater than from æt. 20 to 30; but here the similitude of increase ceases: in the next decennial period the deaths among females augment more than sextuply, while the mortality of males only increases two and a half times, &c."

Mr. Wells comments on the enormous and abrupt increase of female mortality between the ages of thirty and fifty; an increase which accounts for the erroneous notion that the disease reaches its maximum frequency at that period of life, and lends support to the current belief respecting the connexion of uterine and mammary cancer with declining activity and cessation of the genital functions.

The different species of cancer are far from being equally common at all ages: scirrhus is essentially a disease of adults, while encephaloid is the

form usually assumed by the morbid growth in young subjects; colloid appears so far to have been only observed in adult individuals.

"Again, the locality of carcinoma is manifestly somewhat under the influence of age. Previously to puberty, the disease is most common in the eye, the lymphatic system, the brain, and the cellular membrane of the extremities; the uterus, mamma, stomach, liver, intestines, and bones enjoy comparative immunity until the thirtieth year. Exceptions to this rule are no doubt met with; Dr. Carswell is of opinion, that the exceptional occurrence of the disease during infancy or early youth in the latter class of organs depends upon their premature or præternatural functional excitement, and the statement appears to hold good in respect of the uterus, testes, and ovaries."

Sex.—In the last half year of 1837, it appears that, of 1228 individuals who died of carcinoma during that period, 355 were males, 873 females. By calculating the rate of mortality in proportion to the numbers living of each sex, we learn that the annual mortality from the disease is .103 per thousand in males, and .245 in females: the excess on the side of the latter is therefore as nearly as possible as 2.5 : 1. This difference is the more remarkable, from the fact that the mean rate of mortality from all diseases is 20.8 per thousand among males, while it is 19.7 among females.

The influence of town or country habitation is examined. Breschet asserted as an axiom that cancer is rare among persons employed in agriculture. What do Mr. Farr's tables say? From these, says Mr. Wells, we learn, that in the metropolis 185 deaths occurred from cancer, while five counties of nearly equal population, Cornwall, Dorsetshire, Devonshire, Somersetshire, and Wilts, furnished 126 deaths from the same disease. But the excess, on the part of London, is not even so marked as would on first sight appear; for, calculating from the estimated population in October 1837, the annual mortality is .206 per thousand in the capital, .143 per thousand in the counties. And, again, the number of deaths from this affection in a number of our principal manufacturing towns (Leeds, Liverpool, Manchester, Sheffield, &c.), with a total population of 1,762,710, exposed *per eminentiam* to what are esteemed the insalubrious conditions of the life of town artisans, is 152; while in a number of rural districts, containing 1,776,980 souls, 163 individuals fell victims to the disease. Finally, comparing the deaths from cancer in the metropolis and provincial towns on the one hand, with those in all the rural districts referred to on the other (337 in the former, and 289 in the latter), we obtain an annual mortality of .189 per thousand in large towns, and of .165 in the country. The character of this result is rendered more distinct by comparing it with the rate of mortality, from all diseases indiscriminately, in the same towns and counties: the annual mortality in the former is 27 per thousand; in the latter 16.9 per thousand, showing a remarkable minority in favour of a country life.

Thus a town life exercises no serious influence on the production or mortality of cancer, and when we allow for the circumstances that many patients with cancer in the country, remove to towns for advice or for the hospitals, we shall be the more confirmed in our opinion. When any excess occurs in town mortality, it is curious that it is due to the females.

Mr. Wells is unable to arrive at any satisfactory estimate of the influence of occupation or trade on the disease: nor is that of celibacy or matrimony very well made out, though the following is offered as an approximation to

the truth:—of the unmarried .07; of the married 0.48; of widows 1.32 per thousand die from carcinoma. But these proportions are probably mainly influenced by the mean *age* of the different classes of women furnishing them. Mr. Wells appears to doubt the agency of mental affliction, and to lean feebly on hereditary transmission. For our parts we attach more faith to both.

On the *causes* of cancer we do not see much to detain us. Mr. Wells is sceptical of the efficiency of local injury as an exciting cause, and, of course, it is greatly over-rated; yet, a predisposition to the disease existing, nothing is more likely than that local injury should help to light it up. And, however writers, like M. Bouillaud, may ridicule the notion of *predisposition*, the common sense of men rises superior to their verbal quibbles and scholastic subtleties.

Mr. Wells endeavours to apply statistics to the *frequency*, *duration*, and *influence of season* on carcinoma. But however laudable the attempt, we do not think that the time is come for any reliance to be placed on the results of arithmetic calculations. The only table we are disposed to notice is the following:

	From Cancer. (two and a half years.)	From Phthisis. (two years.)
Proportion of deaths in every 1000 deaths.	.671	196.563
Proportion of deaths in every 1000 living.	.174	3.963
Absolute number constantly ill, supposing the diseases mortal and of the mean duration above stated.	6.140	111.416

It appears that, as is the case with most chronic diseases, more persons with cancer die in the inclement than in the milder months.

We would draw attention to the following circumstance in connexion with the *symptoms*.

“The vascular character of encephaloid seems to render it an *à priori* probability that under favourable circumstances *pulsation* might be detected in it. The existence of pulsation is in fact one of the signs of meningeal encephaloid growths protruding through the cranium; but observers are not agreed as to whether this is a motion transmitted from the subjacent brain or arising in the substance of the tumor itself. The same indecision exists with respect to the beating noticed by Dr. W. Stokes in a case of intra-thoracic carcinoma. On

the other hand Dupuytren makes no question of the occurrence of interstitial pulsation, and describes the phenomenon as at first deep-seated, becoming gradually more superficial and distinct, isochronous with the pulse, unattended with rustling sound (*bruissement*), accompanied sometimes in advanced cases with general expansion of the mass, ceasing when the chief artery leading to the part is compressed, and produced by simultaneous dilatation of all the minute arteries of the tumor."

What Mr. Wells speaks of so hesitatingly, occurs, for we have ourselves twice seen it. In one instance the tumor was in the groin and outer side of the thigh, in the other in the iliac fossa. In the former instance, the femoral artery was tied, under the supposition that the tumor was an aneurysm. And, if we remember aright, the same thing occurred to Mr. Guthrie.

Before we quit Mr. Wells, we may allude to the sense in which he uses the terms diathesis and cachexia. By *diathesis*, he understands the state of constitution in which the multiplication of cancer occurs in the economy—by *cachexia* the sum of general symptoms attending the disease. Mr. Wells observes, in reference to M. Cruveilhier, that, "considering the cancerous cachexia and diathesis as one and the same thing, he explains the occurrence of both on the principle of venous transmission:—hence the existence of either involves that of the other. In this confusion of diathesis and cachexia the Parisian pathologist is joined by Müller. Yet that the distinction between the two is not a scholastic refinement, but actually exists in nature, is rendered clear even by the examination of the present question. In fact, no regular relation subsists between the intensity of the cachexia and the number of organs secondarily affected; cancer of the uterus, which, habitually gives rise to most intense general reaction, rarely induces, as has been stated, extensive secondary formation; nor is it exceedingly uncommon to find numerous organs affected in subjects who have suffered to a slight amount only from cachectic symptoms. The necessary inference from these facts seems to be that the diathesis and the cachexia are produced in different modes; and as we have seen that strong probabilities argue in favour of the production of the former by cancerous impregnation of the venous blood, we cannot do otherwise than reject the agency of this in respect of the cachexia. Yet it must be confessed, that until an extended investigation into the condition of the blood at all periods and under all circumstances of the disease shall have been undertaken, these questions are destined to remain undecided."

On the *treatment* of carcinoma, to which Mr. Wells proceeds, we fancy we need say nothing. The interest of such a section is, unfortunately, to come. We cannot, however, conclude without expressing the very favourable opinion we entertain of the manner in which Mr. Wells has executed his task. It reflects credit both on his industry and judgment.

THE TRANSACTIONS OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION. Instituted 1832. Volume VIII. London: J. Churchill, 1839.

THE contents of the present volume, in the publication of which an unavoidable delay has taken place, are as follows :—Proceedings of the Association at Liverpool; Report of the Council; Report on Medical Reform; Report of Benevolent Fund; Report on Quackery; Report of the Section appointed to enquire into the present state of Vaccination, as read at the Anniversary Meeting of the Provincial Medical and Surgical Association, held at Liverpool, July 25, 1839; The Retrospective Address delivered at the Seventh Anniversary Meeting of the Provincial Medical and Surgical Association, held at Liverpool, July 24th and 25th, 1839, by John Addington Symonds, M. D., Senior Physician to the Bristol General Hospital, Lecturer on the Practice of Medicine, &c.; Retrospective Address in Surgery, from July 1836, to July 1839, by J. H. James, Esq. Surgeon to the Devon and Exeter Hospital; Observations on the Variolæ Vaccinæ, as they occasionally appear in the Vale of Aylesbury, with an account of some recent experiments in the Vaccination, Retro-Vaccination, and Variolation of Cows, by Robert Ceely, Esq. Surgeon to the Buckinghamshire Infirmary, (illustrated by engravings from original drawings.)

From this enumeration it will be seen that the purely medical articles are limited to the subject of vaccination.

The Report of the Section appointed to enquire into the present state of vaccination has been considered with care, and is reported with ability. It is too voluminous and too circumstantial to admit of analysis on our part, and all that we can do is to select some of the important statements it contains, and put our readers in possession of them. It is gratifying to be enabled to add that they tend eminently to fortify our confidence in vaccination. The Reporters observe :—"The first division of the report embraces those points that have received what we take to be a satisfactory demonstration. The other divisions, all more or less dependent upon it, have been drawn up from authentic documents, and set forth the past and present experience of many of the most respectable professional gentlemen in this country, in a faithful and condensed form; this at least has been our aim. It must, at the same time, be admitted, that the testimony has not always accorded. In arriving at conclusions we have been compelled to weigh and balance evidence; but as the facts which have guided us are fairly stated, our opinions can at once be brought to the test, and of course will avail no more than as they appear to be conformable to the truth. With this admission we desire it to be understood that nothing has been introduced of an hypothetical or speculative nature; nothing has been kept back unfavourable to the cause of vaccination; neither has anything been withheld that was calculated to produce an impression of a different kind." They subjoin their programme :—"We shall now state the order in which we mean to arrange the different heads or sections. The first will treat of the affinities between human small-pox and cow small-pox. The second will contain what we deem essential to render vaccination correct, with some observations on the

impediments to that practice. We will then proceed to consider the protecting power of vaccination. Our fourth section will comprise remarks on small-pox after small-pox; which will be followed by a brief examination of the question of re-vaccination. Lastly, we shall enquire into the state of the population generally, both with regard to small-pox and vaccination; the means at present employed for the dissemination of the former, with suggestions for restraining it, and promoting genuine effectual vaccination."

AFFINITIES BETWEEN SMALL-POX AND COW-POX.

The reporters remark with cordial exultation, that the great problem respecting the nature of the security afforded to man by the communication of the vaccine disease, is solved. And they pay a high compliment to Jenner's sagacity for having insisted on the probable identity of the vaccine and variolous diseases.

The reporters refer to various epizootics which prevailed from time to time, and were of the nature of variola. Horses as well as cows were liable to the affection. "This interesting fact," they say, "illustrates and explains one of the most difficult and perplexing events in the practice of vaccination. It was known that a disease from the horse was sometimes communicated to the cow by men employed in dressing the heels of the one, and afterwards milking the other. This disease was supposed to be what is vulgarly called *the grease*, and was imagined by Dr. Jenner, in the outset of his enquiry, to be the origin of small-pox. This idea he lived to correct; but the prejudices it excited, and the erroneous views to which it gave birth, have unhappily been perpetuated. It is ascertained that the horse is liable to a vesicular disease of a variolous nature as well as the cow; and that lymph taken from the horse and inserted into man, will produce an affection in all respects like that derived from the cow, and equally protective. The error consisted in believing that this affection was *the grease*, and that it required to be transmitted through the cow to give it efficacy. A misapprehension of this kind may well be excused in the infancy of so complicated an investigation. The disease appearing for the most part on the thin skin of the heels of the horse, and the traditions among the farriers in the country, leading to the mistake. We now know that the vesicle may appear on other parts of the animal's body; and that the horse as well as the cow has, in different ages and in different countries, suffered both from the mild and malignant *variola*."

The reporters cite some facts for the purpose of shewing that the variolous disease in the cow may be very aggravated as well as mild, and communicate to man an equally aggravated as well as mild distemper. Had inoculations, they are of opinion, been performed on man with lymph taken from the cattle as they were afflicted in the middle and latter part of the last century in England, we should probably have witnessed the very same results that have recently taken place in Bengal.

A point on which the reporters insist is the simultaneous existence of small-pox among men and the lower animals in this country—a circumstance observed on many occasions, and indeed not in this country only, but abroad. The facts which they adduce, have all but proved, say the reporters, that the

vaccine disease is not a preventive of small-pox, but the small-pox itself. In order to complete the demonstration, it is necessary to show that the *human small-pox* can be communicated to the cow in like manner as the disease of the latter has been communicated to man. There are good grounds for believing that many of the variolous pestilences that have at different times laid waste the various regions of the earth have been common both to man and the brutes. After noticing several experiments, apparently successful, but not hitherto considered with the attention due to them, the reporters remark :—

“What many gentlemen in this country failed to accomplish, we are happy to say has been at length achieved by one of the members of our Association, Mr. Ceeley, of Aylesbury. Influenced by some of the facts and reasonings mentioned above, he resolved to attempt to ascertain whether he could, by inoculation, impregnate the cow with human small-pox. Twice he has succeeded in accomplishing this important object after many previous fruitless trials. His experiments were conducted in the presence of five medical men and one veterinary surgeon. He produced five vesicles on the cows, from which source several hundred patients have been vaccinated, who have exhibited all the phenomena of vaccination in the most perfect form and complete degree; there was no attendant eruption, nor any thing that could lead him to suspect that he had not in this manner propagated the genuine *Variola Vaccina*. He kindly transmitted portions of this lymph to the President of the Section, who immediately committed it to the care of Mr. Coles and several other gentlemen, in whose hands it produced the most regular vesicles, which in every respect corresponded with those so beautifully delineated by Dr. Jenner, in his first publication. This circumstance forcibly arrested the attention of every one who saw the vesicles, and that too, in several instances, though the source whence the lymph was derived was not known. The correctness of the vesicle formed by it, exhibits a marked contrast to that which we have seen produced by other virus now in use; and we fear that the local as well as general disturbance occasioned by the latter, so far from being a source of protection, will be found to be the reverse.” 26.

On the 1st of February 1839, he inoculated with small-pox matter (*variola discreta*) of the seventh or eighth day, three young heifers; a fourth was at the same time vaccinated. The reporters limit their account of what happened to the first.

“Mr. Ceeley made seven punctures and introduced fourteen points near the left *labium pudendi*, and on the same day inserted two setons with matter from the same subject. On the ninth day after this process, he vaccinated the same animal on the right *labium pudendi*, with fifth, sixth, and seventh day's lymph from a child, in seven punctures with fourteen points; and below the pudendum in four punctures with eight points. On the tenth day after the insertion of the variolous matter, one of the punctures near the posterior margin of the left *labium pudendi* had assumed the form of the natural vaccine vesicle. By gently removing the central irregular crust, and carefully puncturing the cuticle, he was able, in the course of an hour, to charge thirty-eight points with lymph, and on the same and subsequent days to use part of it on children and adults. On the thirteenth day the small-pox vesicle was more inflamed and florid; this was the fifth day after the insertion of vaccine lymph, at which time all the eleven punctures were converted into effectual vesicles; from these he took fine clear lymph, and used it on children and adults. Both the variolous and vaccine vesicles subsequently ran nearly a parallel course; so that on the twenty-sixth day of

the former, and the seventeenth day of the latter, the scars of both appeared perfectly similar.

To obviate objections which might arise from the insertion of the vaccine lymph on the ninth day after the inoculation with the variolous matter, Mr. Ceeley re-inoculated a sturk on the 15th of February with small-pox matter, of the seventh or eighth day, on the *labium pudendi*. He made eight punctures, which were deluged with the variolous fluid from capillary tubes. On the fifth day the four upper punctures were enlarged and elevated; the other four were less so. On the sixth day all presented the appearance of the vaccine vesicle. From one of them he took lymph with difficulty, and scantily charged thirty-nine points. On the eighth day he again took lymph from the vesicle opened on the sixth. On the ninth day the vesicles were enlarging, and he again opened carefully the first vesicle and charged twenty points. On the tenth day the four lower vesicles were increasing, and from them he charged twenty-seven points. After this time the brown crusts appeared, and the disease gradually declined. This animal was subsequently inoculated both with variolous and vaccine matter, but no result followed.

The practice of inoculating the cow with vaccine virus taken from man was very early attempted. It is not to be overlooked that the difficulty of accomplishing this, is almost as great as that of inoculating the animal with small-pox. It succeeded however in the hands of Dr. Waterhouse, who, in 1801, impregnated one of his cows, and obtained from her a 'crop of matter on the ninth day, which produced the disease in the human subject to perfection.' Mr. Fox, of Cerne Abbas, who has paid great attention to this subject, and seen the disease, as well among the cattle as on the hands of the milkers, has also successfully vaccinated the cow.

The same experiments have been performed at Passy, in the neighbourhood of Paris; the lymph found there in 1836, among the cows, has been recently again passed through the animal, and this is called retro-inoculation. Mr. Ceeley, too, has often been enabled to communicate the vaccine disease from man to the cow. He has observed that good human lymph, when transmitted in this manner, loses some portion of its activity; it rises late, and produces smaller vesicles, but ultimately, *after successive inoculations on man*, it resumes its activity." 28.

The Reporters rightly designate this a triumphant conclusion of an investigation of more than fifty years' duration, and the best monument to the sagacity of Jenner. They deduce from what has been done the following aphorisms, to which they entreat the attention not only of the profession, but of the public.

First, that cattle in many ages and different countries, have been afflicted with small-pox.

Secondly, that this disease among the inferior animals has simultaneously existed with the small-pox in man, and pursued its victims through every quarter of the globe; and that it exists at this time in Asia in a fatal and pestilential form.

Thirdly, that it appeared among the cattle in England in the year 1745, and again in 1770, and continued its ravages up to the year 1780; and that the local remains of this epizootic occasionally still shew themselves with considerable severity.

Fourthly, that the casual transmission of this disease to the milkers in the dairies of Gloucestershire, and their subsequent immunity from human small-pox, first led Dr. Jenner to the investigation of this singular affection, and

ultimately to establish it as a substitute for the more pestilential and fatal form of the disease.

Fifthly, that when the disease appears among the inferior animals in a malignant form, it produces, by inoculation, a disease of similar severity in man.

Sixthly, that as man has received this affection from the cow, so likewise has the cow received it from man.

Seventhly, that the direct inoculation of the cow with human small-pox, has produced a mild and mitigated disease; and that such disease, reproduced by inoculation on man, accords entirely in its character, in its progress, and in its protecting influence, with the *variola vaccinae*, as described by Dr. Jenner; thus irresistibly proving his fundamental proposition, that cow-pox and small-pox are not *bond fide* dissimilar, but identical, and that the vaccine disease is not the preventive of small-pox, but the small-pox itself,—the virulent and contagious disease being a malignant variety.

CORRECT VACCINATION AND IMPEDIMENTS THERETO.

The Reporters observe on the discrepancy that obtains in the statements and ideas of medical men upon this head.

1. The only perfect test is the insertion of variolous lymph. This, however, is obviously objectionable.

2. The regular progress of the vaccine vesicle. To determine this, the surgeon should note it at the proper periods. The genuine disease can only be produced by pure lymph from a regular source. The time for taking this lymph, according to Doctor Jenner, is between the fifth and eighth days, and before the formation of the areola. Others have recommended the use of lymph taken at a much later period; but this they believe to be a very questionable practice.

3. Jenner proposed that some fresh vaccine lymph should be inserted into the patient a few days after the first vaccination. This practice was founded on the observation that the second vaccination proceeds with accelerated speed, provided the first has taken effect. It is a very simple and beautiful illustration of the constitutional effects of vaccination, and deserves to be encouraged. An experienced eye will for the most part be able to detect any deviation from the true vesicle.

4. The character of the lymph employed. It never ought to be taken from a vesicle which deviates in the least degree from the perfect standard, nor from a patient labouring under any cutaneous disease.

5. A point which ought ever to be insisted upon, is the leaving one or more vesicles to run their course without being in any way disturbed.

6. The appearance of the cicatrix. The Reporters think that this has been too much trusted. They are inclined to believe that though the presence of a perfect cicatrix is not a sure sign of protection, its absence must be held to speak strongly against the existence of vaccine influence. Yet the observations of Mr. Dodd would seem not to bear out this impression. Of fifty-seven cases that had been exposed to the contagion of small-pox and escaped, in six only was the cicatrix perfect; in fourteen it was slightly defective; in thirty it was very imperfect; and in seven it was totally wanting.

Out of seventy-seven cases of small-pox after vaccination, one bore a perfect mark, fourteen had the cicatrix slightly defective, forty-seven were imperfect, and fifteen had none at all. Thus, to sum up the whole, out of one hundred and thirty-four cases of vaccinated persons who had been exposed to small-pox, the cicatrices of seven were perfect, and one of these failed; twenty-eight slightly defective, of which fourteen failed; seventy-seven very imperfect, forty-seven of which failed; twenty-two had no marks at all, and of these fifteen had small-pox, while seven altogether escaped.

7. The Reporters think, that vaccine lymph, though passed through a great number of subjects, and used for a great number of years, does not necessarily become deteriorated. This, however, can only be said when unceasing attention is paid to every successive transmission; for if a deviation commences, it may be perpetuated, and afford a gradually decreasing protection. There is no doubt that lymph of this kind has been often used.

8. The influence of cutaneous diseases on the vaccine vesicle has been, the Reporters think, insufficiently attended to. Dr. Jenner pointed out that the affection was very much modified in its progress by the scaly tetter, and those affections described by Dr. Willan under the term *psoriasis*, as well as those vesicular eruptions commonly called herpetic. He observed that vaccination performed on a skin occupied by any of these diseases, "produces every gradation from that slight deviation from perfection, which is quite immaterial, up to that point which affords no security at all." The Reporters recall these observations with much earnestness.

9. "Other constitutional peculiarities stand in the way both of human small-pox and cow small-pox. Some resist these affections at one period of their lives and not at another; and there are examples of the very opposite condition, which show that the individual will receive either infection as often as it is presented to him. These peculiarities frequently run in families. We know several children of the same parent, who have had modified small-pox after cow-pox; and not many months ago three brothers had small-pox after small-pox, one of these cases proving fatal. On this subject we have illustrations from Mr. Dodd, who tells us that six brothers and sisters in one family having been vaccinated when children, had the small-pox a few years afterwards. In another instance, two sisters vaccinated in infancy, were subsequently inoculated and had small-pox slightly, they both caught the small-pox again in 1837, and one of them had it very severely. Their father caught small-pox; their mother too, who was inoculated when young, had it again in the same year; their maternal grandfather, beholding from a window at night, the funeral of a friend who had died of small-pox, sickened of that disease and died. These are a few of the affinities and concordances between human small-pox and cow small-pox; and we doubt not that every subsequent observation will establish the analogies. In confirmation we farther remark, that the great object of inoculation with human small-pox, was to produce an affection as much like that of cow small-pox as possible, and by great care in selecting the virus to be employed, this was sometimes accomplished in a very remarkable degree. On the other hand, it is known that the disease, when casually caught from the horse or cow, is often a severe one,—as severe, it was said by an experienced observer, as for the most part was inoculated small-pox. We ourselves have seen it, when caught from the horse, exhibiting great intensity, the hands and arms being covered with the eruption." 39.

PROTECTING POWER OF VACCINATION.

The Reporters present many statements from different sources on this head—a few discouraging, the majority the reverse. The question must still be regarded as unsettled, though we do confess that, while we fear the protecting power of vaccination has been estimated by the enthusiastic Jennerians too high, the general results are greatly in its favour. The Reporters, indeed, look on all as *couleur de rose*.

"From an impartial review," say they, "of the whole of the evidence submitted to us, we are called upon to declare that, with one exception, we do not find any thing to authorise statements respecting periodical failure. That the protecting power of cow small-pox may disappear, must be conceded; but this is no more than occurs with those who have had human small-pox, for they are alike subject to a second attack of the same disease. After the demonstrations already given, we feel ourselves called upon to stand firmly upon this ground. Opinions, which formerly admitted only of analogical illustration, have now received direct and positive confirmation, and we, therefore, hold it to be proved beyond all doubt, that the same general laws which govern *human small-pox*, apply, '*mutatis mutandis*,' to *cow small-pox*. We have a great weight of testimony, all entitling us to assert that the cow small-pox, duly and efficiently communicated to man, does not lose its influence by time. From personal observation, we are entitled to speak with considerable confidence on this point; and many of our correspondents who have been longest acquainted with the practice of vaccination, tell us that they have met with nothing leading them to believe that such a law exists with respect to the disease." 60.

The Reporters feel themselves constrained to ask, when they hear of a great number of cases of small-pox after vaccination:—

1. Has the lymph been pure and perfect?
2. Has the development of the affection been regular and complete?
3. Has the state of the recipient, both with regard to the condition of the skin and other constitutional peculiarities, been such as to present no impediment to the regular course of the affection?

They protest that,—All cases of reputed vaccination, unless they have passed under the review of a competent judge, who has witnessed the different stages of the affection, should be considered as no vaccinations at all. And, finally, they affirm that:—cow small-pox and human small-pox, we repeat it, are alike in their general properties; and if the latter, once taken, for the most part prevents subsequent attacks, so, in like manner, does the former.

SMALL-POX AFTER SMALL-POX.

Of the not unfrequent occurrence of this no doubt can now be entertained. The Reporters accumulate instances of it. But it is not necessary for us to follow them. Suffice it to quote the conclusion they arrive at:—If we except the fatal cases of small-pox after vaccination which are reported to have occurred in the Small-Pox Hospital in London, the deaths from small-pox after small-pox in the country correspond very nearly with

the deaths from small-pox after reputed vaccination. This coincidence is more deserving of notice, when it is considered that small-pox of late years has been very much controlled, and infinitely less diffused than it was before the introduction of vaccination.

RE-VACCINATION.

The Reporters think it important to inquire whether a successful re-vaccination proves that the individual who is the subject of it, is thereby shown to have lost his vaccine protection, and, consequently, to have been liable to small-pox infection. That idea appears to be unfounded. The Reporters "know individuals vaccinated many years ago, who, last winter, as well as on many former occasions, were exposed to small-pox contagion, and resisted it. A very short time after such exposure, they were re-vaccinated, and a complete vesicle appeared. Again the converse is shown by a circumstance which has recently come to our knowledge. A clergyman who was vaccinated in his infancy, was, about ten months ago, re-vaccinated, and completely resisted the infection. Two months afterwards he was exposed to the contagion of small-pox, caught the disease, and had it somewhat severely. We know likewise of cases in which small-pox followed re-vaccination; one took place a few weeks after that process; another is mentioned by Mr. Bailey, of Thetford. A pupil of his was vaccinated when an infant; he attended many severe cases of small-pox, and fearful of the infection he re-vaccinated himself, and went through the disease well. Last winter, while at Guy's Hospital, he took the small-pox, had it smartly, and was obliged to leave town for the country, to recover his health.

We know another case that deserves to be noticed. A lady was vaccinated in 1806. She was re-vaccinated in 1833, and resisted the infection. In 1839 she was exposed to the influence of small-pox in a house where a child died of that disease. On this occasion she was seized with a violent incursive fever, which was succeeded by a slight variolous eruption, but it died away in a few days. It may be mentioned, at the same time, that her sister, who was vaccinated in 1809, had also a slight attack of small-pox, having had about thirty pustules."

Sometimes, after a person has had small-pox, a local effect may be produced by every insertion of the variolous matter, and the Reporters believe that, in like manner a vaccine vesicle may be obtained. They insist upon the fact, that re-vaccination succeeds or otherwise on persons who have had small-pox or cow-pox, almost exactly in the same ratio; thus establishing another most remarkable analogy.

The proportion of one hundred cases of each description is as follows:—

Vaccinated after small-pox, with success	32
Ditto ditto modified	26
Ditto ditto without effect	42
	<hr/>
	100
	<hr/>

Re-vaccinated, with success	..	..	..	..	34
Ditto modified	..	..	..	..	25
Ditto without effect	..	..	..	..	41
					<hr/> 100 <hr/>

They contend that what occurs in this country affords no evidence of the decay of the prophylactic powers of vaccination, although the statements they have obtained upon the subject are conflicting. They are of opinion that re-vaccination can only be required where doubts are entertained of the correctness of the first vaccination. And they add:—

“ Systematic re-vaccinations appear to us uncalled for, and liable to several objections, which we will now briefly state. In the first place, the practice implies that the virtues of cow small-pox are less permanent than we believe them to be; and now that this point has been freed from all ambiguity, we are not inclined to do any thing to shake the confidence which must ultimately spring from right views of this subject. In the next place, it is probable, if re-vaccination be looked upon as essential, that less attention may be paid to the first vaccination than it demands, persons believing that all imperfections may be rectified by the subsequent operation. Now, as we are firmly convinced that incomplete vaccination has been the cause of a large proportion of failures, we cannot help dreading that defects of this kind, which it is so needful to remedy, might become more frequent than they are at present.”

STATE OF THE POPULATION WITH REGARD TO SMALL-POX AND VACCINATION: SUGGESTIONS FOR RESTRAINING THE FORMER AND PROMOTING THE LATTER.

Formerly, in Great Britain and Ireland, between forty and fifty thousand were supposed to perish annually from small-pox; and if we take into account the vast increase of the numbers of the people, probably eighty thousand or more would now fall a prey to it, but for vaccination. From the Registrar-general's First Annual Report it appears, that in the half-year ending on the 31st of December, 1837, one hundred and forty-one thousand six hundred and seven deaths were registered in England and Wales. Of these, five thousand eight hundred and eleven were occasioned by small-pox. The disease was epidemic, particularly in Liverpool, Bath, and Exeter. Of one thousand and fifty-six deaths registered in Bath, Liverpool, Exeter, parts of Shropshire, Worcestershire, and the Metropolis, eight hundred and eighty-seven occurred under the age of four years; ninety-nine between five and nine; fifteen between ten and fourteen; eighteen between fifteen and nineteen; twenty-nine between twenty and twenty-nine; five between thirty and thirty-nine; two between forty and forty-nine; one between fifty and fifty-nine. This specification, it is added, may be considered as an approximation to the ages of the five thousand eight hundred and eleven; and it is inferred that the majority of this number had never been vaccinated, as so large a proportion of deaths occurred among the very young; and it is known that the poorer classes, if they do not neglect vaccination altogether, often defer it for years. The Reporters' returns bear out this view of the subject. It appears, however, that there are

only four diseases more fatal than the small-pox. Nearly six thousand perished in England and Wales in six months; and if the same rate of mortality existed in Ireland and Scotland, at least ten thousand victims might be counted within that period.

It is creditable to the profession that, with only one or two exceptions, it refuses to inoculate small-pox. It would be disgraceful in the highest degree could such a stigma attach to many, or to any of us.

The small-pox inoculators are obscure, ignorant and mercenary persons, who pander to the fears and prejudices from which they draw their disgraceful earnings. Those prejudices are far from weak. At Collumpton, according to Mr. Maunder, small-pox inoculation is extensively practised, and it is difficult to get the people to submit to vaccination, they generally preferring (to use their own expression,) "*the real thing*." Mr. Fox, of Cerne Abbas, tells us that, in a multitude of instances, the poor prefer paying from sixpence to two shillings per head for small-pox inoculation. His neighbourhood is visited periodically by small-pox inoculators. Last year they had a dissenting preacher, a blacksmith, a miller, and an old woman, all taking up this murderous trade; and can it be surprising that there were upwards of three hundred cases of small-pox? Yet under circumstances so unfavourable, he adds, "I have not seen many cases of small-pox after vaccination, and only four within the last year."

The Reporters proceed to contrast the regulations with respect to vaccination on the Continent with our own—not much to the advantage of the latter. And then they propose certain measures to the Legislature, with the view of excluding vaccination and repressing small-pox.

The Reporters make several propositions based on the facts to which we have alluded with more or less circumstantiality.

1. This relates to the practice of small-pox inoculation. "It is well known," they say, "that the exposure of a person labouring under a contagious disease is at present an offence at common law, and punishable by fine and imprisonment. Several convictions have of late years been obtained in consequence of the violation of this law by persons affected with small-pox; but the actual practice of small-pox inoculation does not incur any punishment, though it certainly ought to do so. Now, it has been shown that the diffusion of small-pox epidemically in many districts, may be distinctly traced to individuals not connected with our profession, who have taken up the small-pox lancet, reckless of the consequences, and have thus disseminated the contagion to a most alarming extent. Such persons, we think, ought to be restrained. We therefore propose that the legislature should be petitioned again to declare that individuals labouring under small-pox shall not, under any circumstances, be exposed in such manner as to lead to the dissemination of the disease; and, moreover, that none but a regularly educated medical man be permitted to inoculate for small-pox, and that he likewise shall be liable to all the penalties which may attach to the infringement of the statute touching the incautious exposure of persons labouring under the disease."

2. They would recommend that epizootic diseases, and the history and character of the *variole vaccinae*, should be made subjects of particular instruction and investigation in every school of medicine throughout the kingdom; and that candidates for degrees in medicine and surgery should be

specially examined in this branch of professional knowledge, and that they should likewise have opportunities of practically witnessing and understanding all the instructions they may receive from their teachers.

3. They would propose that duly qualified vaccinators should be appointed for every district in the kingdom, whose main duty should be, at certain seasons, to offer gratuitous vaccination to the poor of every hamlet and village or parish within their respective bounds. The stations and days and hours for vaccination might be fixed, and also the times for inspecting the progress of the affection. Registers, accurately constructed, would show every circumstance connected with perfect or imperfect vaccination, which could always be referred to on any future occasion when small-pox made its appearance in the neighbourhood.

Another duty, they observe, of considerable moment might easily be attached to the offices of these public vaccinators. Living in rural districts, and instructed in the diseases of the inferior animals, they might take advantage of the appearance of the *variola*, either among cows or horses, and procure fresh supplies of lymph when such should be required; or they might perform such experiments as have been successfully conducted by Mr. Ceeley for the renewal of the disease.

We cannot forbear adding one passage. It bears upon one of those evils which have been grafted on the New Poor Law, in consequence of the mistaken and mischievous view entertained by its promoters on the subject of medical relief. It is to be hoped that cruel practices, such as have been seen, upon the poor will soon have ceased.

" We have very strong statements from many of our correspondents respecting the unprotected state of the poor, especially since the New Poor Law came into operation. The Association is too well acquainted with the bearing of that statute upon the medical relief provided for the pauper, to require us to dwell upon any other part of the subject than that which we have immediately in hand. Formerly a moderate and just allowance was made to the parish surgeon for vaccination. In many cases that allowance is either withheld entirely, or so much diminished in value as to cause a very unfortunate neglect of this salutary practice. One gentleman in Cambridgeshire tells us that he had practised thirty-eight years. He seldom passed two years without vaccinating the whole parish: the consequence was, that small-pox was scarcely known, and the mortality as trifling, perhaps, as in any other place of its size in England. The Guardians of the Poor now only allow an insufficient remuneration, and he therefore infers that vaccination will be neglected, and that should small-pox appear in such districts, he significantly adds, the cost of coffins alone will be a heavier charge upon the parishes than would have been incurred by paying a proper remuneration to the surgeon for averting this calamity by vaccine inoculation. Dr. Jenner himself found this very argument (*viz.* the cost of coffins,) influential in driving certain parishes in the neighbourhood of Cheltenham to seek for vaccination.

The Reporters conclude by expressing their satisfaction at the general tenor of the data they have collected in reference to vaccination—data upon the whole extremely favourable to it—and by an eulogium scarcely, perhaps, less just than warm, on the foresight and sagacity of Jenner.

OBSERVATIONS ON THE VARIOLÆ VACCINÆ, AS THEY OCCASIONALLY APPEAR IN THE VALE OF AYLESBURY, WITH AN ACCOUNT OF SOME RECENT EXPERIMENTS IN THE VACCINATION, RETRO-VACCINATION, AND VARIOLATION OF COWS. By *Robert Ceely, Esq.* Surgeon to the Buckinghamshire Infirmary.

Mr. Ceely's paper has been already referred to. It is highly creditable both to his zeal and his ability, and is calculated to add great clearness to our notions of the vaccine disease. We shall allude to such parts of it as seem of most direct importance.

After describing the topography of the Vale of Aylesbury, Mr. Ceely runs over the endemics, epidemics, epizootics, and enzootics that obtain in it. He then describes the variolæ vaccinæ as they appear there, both in their regular and their irregular form. He then passes to the *casual cow-pox* in man.

Speaking of this, Mr. C. observes that—although the casual cow-pox in man is mostly found on those who have not previously gone through variola or the vaccine, it is by no means rare to meet with it on persons who have passed through the latter, and a few who have had the former disease. It is no novelty to see individuals who have taken the casual disease more than once, at various intervals, but not severely; and now we often see cases after vaccination, at periods of from two to fifteen years, of different degrees of severity, not always, but often proportioned to the time elapsed, many declaring their symptoms to be more distressing than those which they remembered of the previous vaccination. On the other hand, we now and then meet with persons who, without any protection, have used every endeavour to acquire the disease by milking, but have failed amidst their more fortunate fellow-labourers.

Mr. Ceely describes the disease as it appears, and the anomalous or irregular forms that it presents. He concludes that milkers are liable to small-pox—first, from having been the subjects merely of the spurious diseases; secondly, from imperfect vaccination, at a late period of the disease, with *deteriorated* and purulent virus, or even with *perfect* lymph, of which they had not at the time been sufficiently susceptible.

Mr. Ceely makes some good and valuable observations on the *primary lymph*.

To procure this liquid, and fit for use, is no easy matter. Mr. Ceely remarks that—acuminated vesicles, containing a thin, serous, and straw-coloured fluid, and of course of little value, more commonly vesicles broken and nearly destroyed before that period has arrived, are often all that remains. Often, too, there are no crusts present or in prospect that can be depended upon. Unless the disease arises in a large dairy, and a consequent succession of cases occurs, it will seldom happen that vesicles are found capable of yielding that which is sought for. More frequently than would be suspected, the practitioner will have the mortification to find on his arrival, that, from the lateness of his information, a whole dairy of cows has passed through the disease, and he can scarcely find even a useful crust. The hands which have damaged the vesicles have also prematurely removed the crusts. Still a careful inspection of all the subjects should never

be omitted; *primary* crusts should be sought for on the lower part of the udder and around the base of the teats. During this search it is not improbable that small vesicles of later formation may be found yielding efficient lymph.

Mr. Ceely gives precise directions for obtaining the best lymph.

"It is to be got from perfect vesicles before the period of acumination; after this period it is less to be depended on, particularly if very abundant, thin, or discoloured. Taken immediately before acumination, it is quite as active as that of an earlier date. In the earlier period, from the fifth to the ninth days, it is often scarcely possible to obtain it in any quantity except the skin of the part be very thin and lax. Lymph from a vesicle which has not acuminated, even if turbid, should not be rejected; it will often succeed when limpid lymph from an acuminated vesicle will fail. Acuminated vesicles which have been broken are rarely to be relied on; and vesicles which have been broken at an earlier period are not much better, and, on account of their liability to afford more than the specific secretion, may prove highly objectionable to some individuals. Entire unacuminated vesicles, or vesicles with central crusts, should be sought for where they are least exposed to injury, viz. on the lower and naked parts of the udder, and the adjoining bases of the teats; but as there is some difficulty in obtaining lymph in sufficient quantity from these sources, the greatest care and circumspection is necessary. It is impossible to exercise too much delicacy in the proceeding. It is scantily secreted, as before stated; the exudation of blood will obscure, and the sensitiveness of the animal under a rough manipulation sometimes altogether prevent, the process. The puncture should be made with a sharp lancet as near the centre of the vesicle as possible, and the epidermis be gently raised to a moderate extent around the discoloured or most depressed part. Slight pressure, either with the blade of the instrument or between the thumb and finger, if done with tenderness, will enable the operator, after some time, to charge a few points with the slowly exuding lymph. Patience and a treble charging of the points are always to be recommended. From what has been stated in another place, it will be understood that the puncture at the elevated and indurated margin of the vesicle will be perfectly useless, as it yields only blood; it may be pernicious by irritating the animal.

Vesicles with central crusts will be found perhaps more convenient, and nearly as productive as those just mentioned, particularly if the crust be small, and the margin of the vesicle tender, hot, and tumid. The crust may be wholly removed or pressed on one side, the epidermis underneath may then be carefully raised if the lymph does not soon exude, and a perfectly limpid fluid, in small quantity, can thus be procured.*

When we are, as too often happens, deprived of the above advantages, we may yet succeed in procuring useful substitutes for liquid lymph in—first, amorphous masses of concrete lymph; secondly, central irregular crusts: thirdly, vesicular crusts or desiccated vesicles. The first are often found upon or in close proximity to broken vesicles; and are either colourless, like crystals of white sugar candy, or of a light amber colour, resembling fragments of barley-sugar, according to the period of their escape, and the length of time they have been exposed to the air. With a few drops of cold water they may be reduced again to the liquid state, and employed with a probability of success. The central rough and irregular crusts, often more or less conical, occasionally contain an admixture of blood or some discolouring secretion, or other adventitious

* "Small superficial vesicles are often more yielding than contiguous larger vesicles more deeply seated."

superficial coating: the more transparent and the nearer a dark brown the better. Desiccated vesicles should be carefully abstracted by the milker before they are casually removed or spontaneously fall, and those only of primary formation, the model of a vesicle, dark-brown and somewhat translucent, should be retained.

Secondary and tertiary crusts are of scarcely any value: these are more or less thin, ill-defined, or irregular in form, of a dirty yellow or yellowish-brown, more transparent, though not unfrequently more dusky and opaque, containing a large admixture of concrete blood and pus." 341.

Mr. Ceely remarks, in conclusion, that good crusts, treated in the manner first suggested by Mr. Bryce for human vaccine crusts, may as frequently be depended on, in suitable subjects, as liquid lymph, and more frequently than much of that which is commonly met with. He owns that, after all, we must not be too fastidious as collectors, success as well as failure not unfrequently occurring when we do not expect it.

Vaccination of Man with Primary Lymph.

Mr. Ceely points out the circumstances which preclude the frequent practice of vaccination with primary lymph. But were it far more practicable than it is, there are formidable obstacles to its success—consisting, first, in the difficulty with which animals of one class receive a morbid poison generated in animals of another class; and secondly, in deficiency or imperfection in the mode of communication. Mr. Ceely presents the following summary of his experience:—

"1. More than half my attempts to vaccinate with primary lymph, taken from vesicles at a proper stage, and possessing all the characteristics of perfection, have entirely failed. The same individuals have immediately afterwards been successfully vaccinated with dry or liquid lymph which had been long current in man.

2. A small number, vaccinated from the same primary sources, afforded results in various degrees of imperfection. In general, the seventh or eighth day has elapsed before any indications of infection have appeared: a dark red pimple has slowly advanced, and gradually assumed a tubercular or tuberculo-vesicular form, being either perfectly lymphless, or a dark red tubercle on the thirteenth or fourteenth day with a scanty supply of lymph on its acuminate summit, with a moderate areola, slowly subsiding, attended by very trifling or scarcely appreciable constitutional symptoms. Nearly all these subjects have been successfully re-vaccinated with ordinary lymph, from periods of nine to eleven months in different degrees of modification, but always with a nearer approach to perfection.

3. A still smaller number, vaccinated from the same primary stocks, have furnished vesicles in the highest degree of beauty and perfection. But even in many of these there has been more or less delay in the full development of the vesicles; and in nearly all, the number of the vesicles has seldom equalled one-half of the punctures.

4. Precisely similar phenomena of entire failure, imperfect, or complete vaccination, with all their attendant circumstances, have followed the use of lymph from perfect casual vesicles on the hands of milkers; and the like results have frequently attended the early removes of lymph from the most perfect primary vaccinations.

5. The whole of these phenomena—abortive punctures, tubercles, tubercular vesicles, imperfectly developed, and, perfectly normal vesicles—may be fre-

quently seen co-existent on the same individuals, either from primary lymph, casual lymph, or the early removes of both from any given vesicle.

6. Although, with the few exceptions previously stated, the copious, repeated, and long-continued casual application of cow-pock lymph to a highly sensitive, vascular, mobile, and extended surface, with or without abrasions, chaps, or fissures of the cuticle during the process of milking, proves a more perfect and successful mode of communicating the disease, yet it is abundantly obvious that even this superior mode is in general more prompt and certain in infecting the cow than the milker." 345.

Mr. Ceely gives a very explicit account of the phenomena observed after vaccination with primary lymph. We must refer the curious to his report. But we may observe that the vesicles admit of remarkable improvement by transmission of the lymph through a series of well-selected subjects. By this process, also, in a very short time, most of the defects and some of the evils connected with the use of primary lymph may be dissipated, and the lymph rendered milder and more suited to general purposes.

Vaccination of the Cow with Primary Lymph.

Mr. Ceely was desirous of ascertaining the susceptibility of the sturk (or young heifer) to the disease artificially communicated. He commenced therefore, by vaccinating some of these animals, about ten months old, in the inside of the ear, on the teats, and in the soft and vascular structure on and near the vulva, with lymph taken from milch cows in the winter of 1838-9, while the disease was prevalent in many of our dairies. Punctures were made in the ordinary way with lancets well charged and with points thoroughly imbued with good lymph; two or three of the latter were broken off short, and allowed to remain in each wound. He found much less difficulty in succeeding than he expected, or than is experienced in vaccinating those animals with lymph taken from man. The lymph used was from the same source and of the same date as some which had been applied to children and adults. On these last, however, it either failed altogether, produced more or less imperfect vesicles, or perfect vesicles with the areola not fully developed till the twelfth, thirteenth, or fourteenth, and fifteenth or sixteenth days.

Vaccination of the Cow with Humanized Lymph, or Retro-Vaccination.

"My experiments in retro-vaccination were almost entirely confined to the sturk under twelve months old; and the parts selected for the operation were those in close proximity to the vulva. These animals were easily procured, while milch cows in any number, at least here, are difficult to obtain for such a purpose. The parts chosen are most easy of access, and in every respect, I think, most desirable. The operation was performed either with a lancet or a sharp straight bistoury. The lymph was either dry, or liquid in capillary tubes. No other precautions were taken than excluding the animals from wet and cold immediately after the operation for a few hours or perhaps a night. Those of a light colour and with thin skins were generally preferred, but often without avail, scarcely one half of the operations succeeding. Tubercles, nearly or completely lymphless, were often produced; but sometimes every puncture succeeded. In the majority of instances the vesicles ran the normal course, declining on the eleventh day. Four kinds of lymph were at different periods employed, each having been current in man for a longer or shorter period." 355.

Mr. Ceely details four experiments, and comments seriatim on the results. After a good many observations on them, he remarks :—

"The above experiments, however, will serve to show the greater difficulty of vaccinating the cow with humanized than with primary lymph, and that, when successful, a much milder disease is the result. Take an abundance of humanized lymph from one of the finest and most productive vesicles ever seen, and if you succeed in retro-vaccinating the cow, you may perhaps be able to charge scantily only a very few points from a vesicle which excites but trifling topical inconvenience. Vaccine lymph, it is obvious, therefore, in passing from the cow to man, undergoes a change, which renders it less acceptable and less energetic, on being returned to many individuals of the class producing it; some refuse it altogether. But this reluctance or absolute refusal, this difficult imbibition or total insusceptibility, does not exist to the same extent as observed in the converse of this experiment, viz. in passing primary lymph from the cow to man by the same means. Here we have considerable difficulty; but when we succeed, a severer disease is induced. These experiments clearly show that the age of humanized lymph does not seem to influence its reception by the cow. Provided that the lymph be of ordinary activity, and possess the normal qualities, it is as likely to succeed in its operation on the animal whether it may have been current in man a few weeks or many years, and will excite equally perfect and productive vesicles. The effects of retro-vaccine lymph on man, as compared with primary and current lymph, are worthy of notice. Lymph which had passed from arm to arm with the greatest promptness and facility, and produced the finest effects, in its first removes from the costive vesicle of the retro-vaccinated cow, is not so readily absorbed by many individuals. It rarely fails: but papulation is retarded, and though the vesicle may attain maturity at the normal average period, the completion of that stage is frequently postponed. The vesicles are often smaller, and the disease really not so well developed, as by the stock from which it was derived. But these changes do not appear after the second or third remove. The lymph is restored to its former qualities, and produces its former effects. Some of the retro-vaccine lymph of the second experiment, transmitted to the Small-pox and Vaccination Hospital, from whence it was originally derived, was passed through a long series of subjects, under the inspection of Dr. Gregory and Mr. Marson, who, though better able to make the comparison, were unable to detect any sensible difference in its local or constitutional effects after the second remove. On the third remove it became 'very fine,' as it was before its transit through the cow." 368.

Mr. Ceely considers the question, whether the practice of retro-vaccination is of any real value as a means of renovating humanized vaccine. He confesses himself unable to discover any advantage belonging to it.

Mr. Ceely, too, examines the question—Is any vaccine lymph, in passing through many individuals with all due care and selection, susceptible, in process of time, of actual degeneration or essential diminution of intensity? He points out the circumstance that in India, at Silhet, a speedy degeneration was observed—that M. Bousquet, in France, and Dr. Gregory in London, have also observed a decadence of power in old lymph, and he contrasts with these some opposing testimonies. He winds up by saying—that his own repeated applications to the cow have been chiefly for the purpose of experiment, for the satisfaction of patients, or the accommodation of friends, not from any belief in its superior protective efficacy over active humanized lymph. But when lymph is found uniformly deficient in infecting property, vesicles abnormally rapid in their course, at their greatest development on the seventh day, yellowish in appearance on the eighth with turbid lymph,

central desiccation on the ninth, and a miserably small crust falling on the fifteenth or eighteenth day, common prudence dictates its discontinuance, and urges the adoption of a new supply, although constitutional symptoms may not be absent, for *weak* lymph may not be better than *late* lymph. There surely, in so delicate and important an affair, must be more satisfaction in using that which will affect promptly and certainly, produce a vesicle in its greatest beauty on the tenth or eleventh day, which will then and even later contain a limpid and often an effective lymph, and desiccate not completely till the fourteenth or fifteenth day. Such we know was the vaccine of 1800.

Mr. Ceely makes a few remarks on the *affinity of cow-pox and small-pox*.

The only facts he has been able to collect are these;—"The cow-pox has occurred—First, during epidemic small-pox, but when no cases of variola have been known in the neighbourhood: secondly, when variola has been prevalent in neighbouring towns: thirdly, when variola has been in contiguous villages: fourthly, when in the same village (perhaps a solitary case) in which the affected farm was situate: but, fifthly, I have never succeeded in tracing positive or probable intercourse of convalescents from small-pox, their friends or attendants, with a dairy or its occupants, except in one instance, in the autumn of 1838, during which time, and the early part of the following year, cow-pox was prevalent, and in this case it can scarcely be supposed to have had any influence; the milker had carried a child some miles labouring under modified small-pox;" and lastly, it is often seen in a single farm, but not unfrequently, in several at the same period.

Variolation of the Cow.

Mr. Ceely failed with his first experiments, but, in the early part of 1839, he was more successful. He inoculated three sturks (young heifers) with small-pox virus, (*variola discreta*), seventh or eighth day, on large points—the teeth of a comb—charged twelve hours previously. These experiments have been already alluded to in the Report of the Vaccination Section, and, we shall merely quote Mr. Ceely's summary of the facts of the second experiment. The first time he inoculated this sturk he failed. But re-inoculation was successful. "It was performed in *part* in a situation where the skin seemed thin and bled freely on puncture. On the fifth day the purplish or livid pimples, so much like the natural or casual vaccine on the thin skin of the teats, at this stage announced the success of the operation on the lip of the vulva, and I certainly thought all the other punctures had succeeded on the thicker skin *near* the vulva; the want of colour in these elevations was attributed to the texture of the skin there. On the sixth day every thing advancing, but the larger and colourless elevations seemed without lymph; the four glistening vesicles had a slight central crust, clearly announcing their character. Lymph was procured from one, with great difficulty, perfectly pellucid and adhesive. The seventh day the tubercular character of the four upper elevations quite manifest; they were *subsiding without a central crust*; the four vesicles had increased in breadth, and were less elevated. On the eighth day lymph was again taken from a vesicle which yielded it more readily than others; and, anxious not to interrupt their development, they were not again touched. All the vesicles were of a glassy resplendency; the tubercles were evidently passive. On the ninth day more lymph, perfectly

pellucid, very scanty, was taken, the vesicles clearly advancing. On the tenth day, the day of maximum development of the vesicles, a slight areola round one of them; all had a very active appearance, and the lymph taken was perfectly limpid and quite as adhesive as before. The decline of the vesicles on the eleventh day was perfectly obvious, and precisely as in the natural, casual, and innoculated vaccine. This was confirmed by the appearances on the twelfth day. On the twenty-sixth day, the crusts having fallen a day or two, the smooth pale rose-coloured scars were observed. Re-inoculation and re-vaccination here also proved unavailing. The lymph taken on the different days was used with different degrees of effect; but, when successful, produced perfect vaccine vesicles."

Mr. Ceely details at some length the experiment just mentioned. For the particulars we must refer to the paper itself, and content ourselves with adverting to some of Mr. Ceely's observations. "In the transfer," he says, "of the above lymph from the animals to man, my attention was forcibly arrested by the difficulties attending the process; and in the entire failure of so many punctures, the production of so many lymphless papulæ, and the formation of so few perfect vesicles, I recognized phenomena so common in similar trials with primary lymph. In some instances the difficulties were not completely overcome even in the second removes. The marked improvement, in subsequent removes, in the development of the vesicles, and the active manifestation of the primary and secondary symptoms, were not less apparent than in the use of natural lymph under corresponding circumstances, except that, in very few instances, and those principally in later removes and in peculiar subjects, there was not observed that disagreeable, inconvenient, and mischievous acrimony so peculiar to the former lymph. The lymph from the vaccine vesicles on the first experiment seemed to have acquired activity without causing the same amount of difficulty in its transmission.

These experiments with the variola vaccine lymph on man, show the necessity of having a number of subjects of different temperaments on which to employ it, on its first removes, to ensure success. It seems highly probable, too, that the direct transmission of the liquid lymph from the animal to children will save much trouble and conduce to greater success."

We scarcely think that any apology is due for the length at which we have considered the subject of vaccination. Its great intrinsic consequence—its particular importance at the present moment, when doubts are afloat regarding its efficiency—and, last not least, the satisfactory results of the late experiments, all plead our excuse, and, we trust, successfully. For the identity of the vaccine disease and variola may now be looked on as redeemed from the regions of conjecture, and the fears that existed for the deterioration of the vaccine lymph may now be fairly dispelled. It bears many removes, and at last, when its efficiency is failing, the cow may be confidently resorted to once more.

MEMOIRES DE L'ACADEMIE ROYALE DE MEDECINE.
Bailliere, Paris, 1840.

THESE Memoirs may be considered as similar, in their object and general characters, to the Transactions of our Medico-Chirurgical Society.

To enable our readers to judge of the comparative merits of the two works, as well as to inform them of the progress of medicine and surgery among our neighbours, we purpose to give a condensed summary of the contents of the present volume.

These are as follow:—1. Historical *éloge* of M. *Itard*, the author of several well-known works on the Ear. 2. Historical *éloge* of M. *Laennec*. 3. Historical *éloge* of M. *Biott*. 4. Researches on the Diseases of Old Age, by M. *Prus*. 5. Treatise on the most common Diseases of Iceland, by Dr. *Thornstensen*. 6. Memoir on the operation of Lithotomy, by M. *Souberbielle*. 7. Memoir on the Dysentery of Guadaloupe, by Dr. *Cornuel*. 8. Researches on the structure of the Cortical Substance of the Convolutions of the Brain, by M. *Baillarger*. 9. Statistical Memoir on Pleuro-pneumonia, by M. *Pelletan*. 10. Memoirs, seven, on Poisoning—[*a*, poisoning from arsenic—*b*, on the means of ascertaining that the arsenic is not derived from the tests or vessels employed in the experiments—*c*, on a new process to discover the presence of arsenic absorbed into various organs of the body—*d*, on the arsenic naturally contained in the body—*e*, on the soils of cemeteries, and the arsenic which may be found in them—*f*, on poisoning from the tartrate of antimony—and, *g*, on poisoning from the salts of copper.] 11. Memoir on Re-vaccination. 12. New Researches on Human Urine, by M. *Lecanu*. And, 13, on Vaginal Cystocele operated on in a new method.

Passing over the three *éloges* with the single remark that, on the whole, we highly approve of such public panegyrics on distinguished characters, and that we should be glad to see the practice, carried although it be by our neighbours somewhat to excess, imitated in this country,* we shall at once proceed to the notice of the several practical memoirs whose titles we have just given, beginning with the—

Researches on the Diseases of Old Age.

Dr. *Prus* has had unusually extensive opportunities of studying the diseases of old people, having for seven years past been attached to the medical staff of that immense establishment, the Hospice de la Vieillesse in Paris.

He first takes a rapid review of the various organic changes which gradually take place in the system as old age advances, and then points out the

* We observed by the public prints, that over the grave of our distinguished countryman, Sir Sidney Smith, who died within the last twelvemonth at Paris, three *éloges* commemorative of his private virtues and public services were pronounced, and that two out of the three were spoken by Frenchmen!—an act of generous and noble feeling. (*Rev.*)

practical conclusions which the enlightened physician will draw from the consideration of these in the treatment of its diseases. The imperfect mastication of the food in consequence of the loss of the teeth, the attenuation and atrophy of the muscular and mucous coats of the stomach and bowels, the diminution in the size and number of the lacteal vessels, and the contraction and induration of the mesenteric glands must necessarily retard and impede the formation and absorption of the chyle; the progressive lesion of all the respiratory organs, the shrinking of the chest, the gradual wasting of the pulmonary parenchyma itself, and its diminished dilatability by the inspired air, the hardening and contraction of the larynx and bronchi, the thickening of their mucous covering, &c. all tend to render the aeration of the blood more and more imperfect; then the gradual changes in the substance of the heart and large bloodvessels,* too well known to all to require even a passing remark, the contraction and ultimate disappearance of the minute capillaries, to which is owing in a great measure the dryness and wrinkled state of the skin, the gradual enlargement of all the veins of the body, the inactivity of the lymphatic vessels in every part, the atrophy of the brain, spinal-marrow, and their nerves, the wasting of the muscles, the brittleness of the bones, not to mention numerous other organic alterations in every structure and tissue of the body—all these are most expressive indications that the machine of the body is becoming less and less able to perform its functions, and must therefore be less able to resist the encroachments of disease.

Besides these alterations in the solid parts of the body, equally obvious changes are going on in the composition and qualities of its fluids: these it is unnecessary to particularise; and we shall therefore now proceed to examine the interesting question, *What are the most common and most fatal diseases of old age?*

The following data will enable us to form an opinion on this subject.

Dr. Prus examined the bodies of 390 patients, between the ages of sixty and ninety years of age, who died in the *Bicetre* during the years 1832—3—4.

Of these, 149 died of diseases of the respiratory organs—viz. 77 of pneumonia, 26 of pleurisy, 18 of tubercular phthisis, 10 of asthma, eight of bronchitis, four of pulmonary congestion, two of asphyxia caused by excessive tympanitic distention of the abdomen, one of laryngitis, one of cancer of the larynx, and one of cartilaginous granulation of the lungs.

* Dr. Prus remarks that, in consequence of the various changes which age induces in the arteries, we should always examine the state of the pulse at the heart, and not at the wrist, in old persons. "How often," says he, "have patients, whose radial pulse was feeble and irregular, but whose heart announced an energetic resistance, been bled with marked advantage, and thus escaped a speedy and inevitable death." (This precept requires to be received with caution; a strong tumultuous action of the heart is not unfrequent in old people, especially when there is incipient hypertrophy of its ventricles or contraction of its orifices, (a common occurrence,) which by no means indicates the necessity for depletion; and even when this is deemed necessary, it is often safer to draw blood by cupping over the cardiac region than by opening a vein in the arm.—*Rev.*)

Lesions of the nervous centres are next in point of frequency; 101 deaths being attributable to this class—viz. 25 to meningitis, 23 to cerebral ramollissement, 18 to recent cerebral apoplexy, six to apoplexy of old date, six to meningeal apoplexy, five to cerebritis, (in which purulent matter was found blended with the substance of the brain,) four to serous apoplexy, four to *coups de sang* or sanguineous congestions without laceration of the cerebral substance, two to capillary apoplexy of the convolutions, two to apoplexy of the annular protuberance, one to apoplexy of the cerebellum, one to contusion of the brain, and one to general paralysis.

Then follows the class of diseases of the circulatory organs, which amounted to 64. These cases may be subdivided as follows:—54 of diseases of the heart, three of arteritis, or arterial ossification giving rise to dry gangrene of the extremities, two of aneurism of the aorta, two of pericarditis, one of obstructed vena cava from an enlarged lumbar gland, and one of vegetations in the aorta, accompanied with periostosis of the clavicles.

The diseases of the alimentary canal amounted to 49;* there being 27 cases of enteritis, 10 of cancer of the stomach, four of gastro-enteritis, three of colitis or dysentery, two of gastritis, two of diarrhœa without inflammation, and one of softening of the mucous membrane of the stomach.

In addition to the causes of death enumerated, eight patients died of diseases of the liver, and the remaining 19 either of erysipelas, nephritis, fever, or some other casual malady.

We need scarcely mention that, in almost every case, the disease which appeared to be the more immediate and primary cause of death was seldom solitary, but was accompanied with morbid changes in other parts of the body at the same time.

The frequency of certain diseases, especially of inflammatory diseases of the lungs and also of apoplexy, will be found to vary very considerably in different years: hence the importance of attending to what has been called the *medical constitution* of the seasons on the development of certain maladies. Dr. Prus insists particularly, and with much propriety, on the necessity of aged people being warmly clad, and of guarding as much as possible against the influence of atmospheric vicissitudes. Neglect of these precautions is, he thinks, one of the chief causes of the great frequency of pneumonia among the inmates of the Bicetre and the Salpetriere hospitals at Paris.

So much for the relative frequency of the diseases in the different systems of the body in old age: let us now endeavour to determine the average number of deaths or the ratio of mortality among sick persons above sixty years of age.

Dr. Prus states that in the course of three years he lost 430 patients out of 1345 received upon the sick list at these two immense establishments. The mortality in the practice of the other physician, his colleague, was quite as great; so that we have a total of about 860 deaths in the course of three years, or of 287 yearly, among 2500 persons—the usual number of the

* It was long erroneously imagined that the most frequent diseases of old age were those of the abdominal viscera.

resident inmates ; giving the average or ratio of about one to eight and four-fifths, for the entire number of these inmates ; and of one to three and four-eighths for the 1345 patients who were under medical treatment.

Dr. *Prus* proceeds next to give several tables to illustrate the actual and relative mortality in the different months of the year : suffice it to say that the greater number of deaths occurs during the cold seasons. He then enumerates the diseases of 685 patients who were cured or relieved during his three years' practice at the Bicetre and Salpêtrière hospices. Of these there were 216 cases of affections of the respiratory organs, 151 of affections of the nervous centres, 144 of abdominal complaints, 54 of diseases in the organs of circulation, 22 of cutaneous affections, and the remaining 98 of diverse and occasional diseases.

Having treated of these subjects, our author makes some useful remarks on the great difficulty of accurate diagnosis in many of the diseases of old age.

"What must frequently astonish the physician," says he, "is the want of reaction in most organs, and even in those which are immediately connected with life. For example, the lung may pass into a state of grey induration, and the stomach may be the seat of a cancer, without the attendance of any of those symptoms which almost invariably accompany them at earlier periods of life. The heart itself, as long ago remarked by *Bichat*, is often found in old age to exhibit lesions which would have quickly killed an adult or child, although during life no disease may have been suspected. Hence the necessity of a most watchful care in the examination of old people's maladies. How much has auscultation done in reference to the lesions of the respiratory organs ! Before the knowledge of this great discovery, the diagnosis of many thoracic diseases among the aged was almost quite impossible ; a circumstance which explains how such a man as the illustrious *Pinel*, who had passed many years of his life in the Hospices de la Vieillesse, has described under the name of adynamic fever a state which is now recognised by all pathologists as belonging to the second and third degrees of senile pneumonia."

Another circumstance with respect to the diseases of old age, which is no less remarkable, is that the mutual sympathy and co-operation of the different organs for the preservation of life are greatly impaired. Each organ seems to live isolated ; and hence it may succumb to disease, without the other organs coming as it were to its assistance. Thus the lung may become impermeable to air and even completely disorganised, and yet the heart will often not announce the existence of any lesion by an increased frequency or by any other change of the pulse.

"I have often," says Dr. *Prus*, "made a comparison which seems to me exact. Go into a ward devoted to the treatment of the diseases of old age, and you will be astonished at the complete indifference with which a patient witnesses his neighbours and co-inmates die around him. It is the same in the economy of the old man ; it will become demolished piece by piece, without there being any re-action of the *ensemble*, or without any preservative effort being made by the system."

In a future paper Dr. *Prus* proposes to describe the leading specialties or peculiarities which he has observed in some of the most frequent and most fatal of the diseases of old age.

Memoir on the Operation for Stones.

M. *Souberbielle* is one of the most, if not the very most, experienced and successful lithotomists of the present day in France. He has during his practice performed the operation several hundreds of times, and within the last five years has operated on fifty patients. The present memoir is occupied with the histories of these fifty cases, and with practical remarks on their general results. These we shall now briefly present to our readers; and it is the more important that the opinions of M. *Souberbielle* be generally known, as he differs from the leading surgeons of other countries as well as of France in giving a decided preference to the *high* over the *lateral* operation of lithotomy.

With respect to the *age* of the patients, nine were under ten years, three above ten and under twenty-two years, one was forty-two years old, five were from fifty to sixty years, thirteen were sexagenarians, seventeen were septuagenarians, and two were octogenarians.

M. *Civiale* is probably mistaken when he asserts that one half of the entire number of calculous patients are children: the disease seems to be most frequent at the two extremes of life.

The mortality in these fifty cases amounted to eleven—which is rather greater than usually attends the practice of M. *Souberbielle*. This was chiefly owing, he thinks, to the circumstance of the operation of lithotomy having been of late years more frequent than it used to be; and as this operation is performed only in favorable cases, the chances of success for the cutting operation in the remaining cases are proportionally less. M. S. adds that if he merely consulted his reputation as a successful lithotomist, he should certainly not have performed the operation in at least three of the fifty cases, as the health of the patients was at the time very bad, and there were grounds to suspect organic changes in the urinary organs.

The average success of his practice has been very nearly the same as that which attended *Frere Come*; this celebrated surgeon lost nineteen out of a hundred cases after the high operation of lithotomy. Indeed this seems to be about the average mortality after the operation of lithotomy, whether by the high or by the lateral method, in the practice of the most distinguished lithotomists, whenever a large number of cases is compared.* The wonderful success attributed to *Raw*, who it has been said cut 1550 patients without losing one, has been shewn by *Sandifort* to be quite fabulous; as it seems that he performed lithotomy no fewer than 2200 times in all. M. *Souberbielle* himself has operated successfully in 29 cases following; but then at other times he has been greatly less fortunate; so that, as he frankly admits, the average mortality in his practice has been one death in every five or six cases—a ratio which he believes, as we have already stated, to be about the average one after the operation of lithotomy, whenever a large number of cases is compared.†

* *Dupuytren* has expressed the same opinion in his Treatise, which was published a few years ago.

† It seems that the Paris hospital surgeons are unusually unsuccessful in their operations of lithotomy. If we are to believe M. *Civiale*, of 61 cases at La Charité, 35 proved fatal; of 96 at the Hôtel Dieu, 27 were fatal; of 11 at

As to the sex of the patients in M. Souberbielle's 50 cases, 48 occurred in men, and two in women. During his long and very extensive practice he has performed lithotomy fifteen times on females—nine times by the high, and six times by the low operation.* Two cases proved fatal; once after the high operation, in consequence of suppurative inflammation in the kidneys; and in the other case, after the low operation, in consequence rather of excessive exhaustion and debility than of the operation itself. The size of the calculi was in most of the cases (in females) large; one weighed five ounces and a half; two weighed four ounces; one three ounces and a half, and two three ounces. In two cases only was there more than one calculus present; whereas in 16 of the 48 cases in the present series, which occurred in males, there were several calculi in the bladder.

In all the cases of the high operation on women, M. Souberbielle has used the *sonde à dard* introduced along the urethra; and on every occasion, whether of the high or of the low operation, a flexible catheter was left in the bladder for several days after. The low operation—which is applicable whenever the calculus is small, or when it is at all engaged in the vesical orifice of the urethra—is best performed with the *lithotome caché*; the cutting edge being turned to the left side, and the instrument then withdrawn transversely so as to divide the left side of the urethra and of the neck of the bladder.

So much for the operation in women. Let us now continue our general remarks on the histories of the 50 cases which form the subject of M. Souberbielle's memoir. In 12 of the cases, unsuccessful attempts to remove the calculi by lithotripsy had been previously made; and in the majority of the 38 remaining cases this operation had been deemed inapplicable.

In 40 out of the 50 cases, the high operation was performed; in the remaining 10, and of these eight were in children, the calculi were extracted by the lateral operation. In the case of the two adults, M. Souberbielle preferred the lateral operation in consequence of there being a partial paralysis of the bladder (which ceased on recovery from the operation) in one of them, and in the other, which occurred in a woman, because the calculus was already impacted in the urethra.

Except in the case of children, or when there are some peculiar circumstances, M. Souberbielle gives a decided preference to the high over the low or lateral operation of lithotomy.

"This preference," says he, "is founded alike upon reasoning and upon the results of experience. By the high operation we can easily extract every sort of calculi, whatever be their size, their number, their situation, the volume of the prostate gland, &c. &c. Besides, the operation is less painful, and is not apt to be followed by the same accidents, since only the integuments, the linea alba, the adipose cellular tissue, and the body of the bladder are divided; and there

Beaujon, 6 were fatal. M. Souberbielle adds—"I am far from guaranteeing the accuracy of these assertions; but I have certainly been much struck with the sad want of success after lithotomy in the hospitals of Paris."

* As a general rule, M. Souberbielle prefers the high operation in women as well as in men; in the former, because, says he, "it is not apt to be followed by incontinence of urine, so common after the low operation, especially when the calculus is large."

is not the same danger of hæmorrhage, fæcal fistulæ, infiltrations, seminal impotence, &c. taking place.

The operation in itself is very seldom the cause of death, as is distinctly proved by the results of the post-mortem examinations in fatal cases. The cause of death is usually attributable to the exacerbation of pre-existent organic disease, either in the bladder itself or in the kidneys."

With respect to the *size* and the *number* of the calculi in *M. Souberbielle's* 50 cases, we may mention that in three of them the calculi were very large; in one, which occurred in a medical man 82 years of age, the calculus weighed half-a-pound; and in another case, which however unfortunately proved fatal, upwards of 300 calculi were extracted. Our author is of opinion that when calculi are either encysted or firmly grasped and retained by the coats of the bladder, they are much more easily extracted by the high than by the lateral method of operating, and appeals to six cases in his present catalogue in proof of this assertion. "In one case especially the calculus, being lodged in a cavity at the fundus of the bladder, could not have been reached from the perineum, and the manœuvre by which it was turned out from its place must have been quite impracticable."

This circumstance of the *fixité* of the calculi in the bladder, which in *M. Souberbielle's* opinion gives so many advantages to the high over other methods of operating for stone, is far from being so unfrequent as is often supposed; for in 16 out of the 50 cases, the calculi were either firmly embraced by the parietes of the bladder, or lodged in cavities, the edges or circumference of which in two cases required to be divided with the bistoury. In one case, where the pelvis was so much deformed that the lateral operation could not have been performed, three calculi, each of the size of a chestnut, were successfully extracted.

As the observations of so experienced a man as *M. Souberbielle* must be interesting to every practical surgeon, we shall follow him in his comments on the objections which are usually made to the high operation: these are, the risk of the infiltration of urine, of wounding of the peritoneum, and that of hæmorrhage.

As to the first of these accidents, which is certainly one of the most frequent and dangerous consequences of the lateral operation, it occurred in *one only* of the forty cases where the high operation was performed; and "I may state," continues our author, "that in my very numerous operations I have never known it to happen except in this single case, where it was attributable to a circumstance foreign to the operation." He asserts that this accident can scarcely occur if care be taken not to separate the anterior wall of the bladder from its adhesions to the neighbouring parts; and he therefore very strenuously condemns an advice given by *Ludwigg* and some other surgeons to tear, and not to cut, the cellular substance behind the *linea alba*.

With respect to the risk of wounding the peritoneum in the high operation of lithotomy, we find the following remarks:—

"However little enbonpoint there may be, the place of the reflection of this membrane is from two to two and a half inches distant from the superior angle of the incision, and it is very rare that this interval is less than one inch: moreover, in dividing the *linea alba* with caution, and as *Frere Come* says, rather by a pressing than by a sawing movement, the aponeurotic band being strongly

stretched, the peritoneum must retreat from the cutting edge of the instrument, and a wound of it supposes some rare condition of the parts, such as excessive emaciation, or an unusual contraction of the size of the bladder. (This sentence is far from being clear.—*Rev.*). But even when the peritoneum has been wounded, there is by no means that amount of danger which is usually imagined, provided the discharge of the urine is maintained, by means of a syphon introduced into the bladder, for some time after the operation. The accident occurred in two of the forty cases; and although one of these two cases proved fatal, the death was certainly not attributable to any effusion of urine into the peritoneal cavity, but to the co-existence of serious disorganization of the kidneys and bladder. In the other case, no unpleasant consequences followed."

The risk of fatal or even troublesome hæmorrhage after the high operation is exceedingly small. Nevertheless one of the forty cases proved unfortunate from this rare accident; the following are the particulars.

Case.—A gentleman, 58 years of age, excessively fat and subject to hæmaturia, had undergone several unsuccessful attempts of lithotripsy, when he applied to M. Souberbielle to relieve him of a stone in his bladder. The high operation was performed, and two rough calculi were extracted. After the operation the urine was very bloody, and the patient was much distressed with frequent calls to pass it. A large quantity of clotted blood came away with injections, and then fluid blood flowed out in a continuous stream from a catheter left in the urethra. The extreme corpulency of the patient prevented an accurate examination of the parts to ascertain whether the bladder was distended or not. The patient becoming exceedingly faint and low, M. Marjolin was called in to the consultation; but nothing that was tried was of any avail in restraining the hæmorrhage, and the patient died twenty-four hours after the operation. On dissection the bladder was found to be greatly dilated, and to contain not less than two pounds of coagulated blood; the cellular substance also behind the abdominal muscles, even as far as the umbilicus and the iliac fossa, was infiltrated with blood. The hæmorrhage seemed to have come not from any considerable vessel, but from a vascular state of the bladder itself, which was throughout much thickened and hypertrophied.

We have already stated that M. Souberbielle always makes use of the *sonde à dard* in performing the high operation, whenever he can. He employed it in 37 of the 40 cases. In the three other cases, the contracted state of the bladder and its close application round the calculus prevented the introduction of this instrument, and the operator was therefore obliged to cut directly upon the stone itself, and then enlarge the incision either upwards or downwards with the *bistouri caché* or with the *bistouri lenticulé*.

After the operation M. Souberbielle always leaves an elastic gum syphon in the bladder, to evacuate the urine as it is secreted: he has never met with any inconvenience, but on the contrary has always witnessed great advantage, from this practice. When the urine escapes by the wound, it is usually about the eighth day, it then continues to do so for about a week, and generally ceases about the fifteenth day; often however, none passes at all this way; and in one of the cases the wound healed by the first intention, and the patient voided his urine by the urethra on the third day. It is worthy of remark that the patients seldom or indeed never experience so much pain when the urine escapes by the wound after the high operation as after the

lateral one, especially when the edges of the wound in the perineum have been bruised by the instruments, or by the calculus itself during the process of extraction.

The syphon was usually kept in the bladder from fifteen to twenty or twenty-five days. Before removing it, M. *Souberbielle* recommends, that for several days previously, it be plugged during three or four hours at a time, for the purpose of ascertaining the solidity of the cicatrix of the bladder: whenever it incommodes the patient, or the contractions of the bladder force it out, it may be withdrawn. The only inconvenience of this, which M. S. has observed, is that the healing of the wound is somewhat retarded.

In concluding his memoir, our author mentions that seven out of the fifty patients, on whom he operated, were affected at the same time with hernia—a proportion which is higher than the average frequency of rupture in other individuals. It is probably from the violent contractions of the bladder and of the abdominal muscles to expel the urine in calculous diseases, that such patients are apt to become ruptured. Now the effect of such a complication must be to draw down the peritoneum lower than it is in a healthy state of the parts; and hence, although its existence does not constitute a sufficient objection by itself to the performance of the high operation, yet more than usual caution should be used by the surgeon in cutting into the bladder in such cases.

In ten of the forty cases the patients were very fat; this circumstance does not increase the difficulty of the high operation of lithotomy nearly so much as is supposed, although certainly the extraction of the stone is somewhat *géné* by a fatty condition of the parts; but then, on the other hand, in such cases there is less risk of wounding the peritoneum, and moreover the cellular tissue, when filled with adipose substance, can be divided with greater ease and neatness, and is much less likely to admit the infiltration of urine into it than when it is more lax.

The occurrence of vomiting during the first few days after the operation—and indeed the same is apt to occur after the lateral operation—by no means implies the accession of peritonitis: this symptom often subsides spontaneously or under the use of opiates.

Lastly, it is worthy of notice in reference to M. *Souberbielle's* fifty patients, that the operation was performed on two who had undergone it some years previously. He remarks—"I have in general been successful with my second operations. The most remarkable cases on this head, which have occurred in my practice, are those of MM. Suire, Daumy and Seraphin, each of whom I cut for the stone four different times."

Such is a brief summary of the contents of M. *Souberbielle's* memoir, which well deserves to be consulted in the original by all operating surgeons. The practice in some of the cases seems to have been rash, as the prognosis was far too unfavorable to justify the performance of so serious an operation as that of lithotomy, either by the high or by the lateral method. The success however on the whole, even under such disadvantageous circumstances, sufficiently shews that the high operation in the hands of a dexterous surgeon is by no means so dangerous as it is generally believed to be. We again recommend the attentive perusal of the memoir to all lithotomists.

The next memoir which comes under our notice is one *On the most frequent Diseases in Iceland*, from the pen of a Dr. *Thornstensen*, a Danish physician, who has for many years been resident there: it is written in Latin. As might be supposed, inflammatory, febrile, and rheumatic complaints form the staple of the nosological catalogue among the hardy Icelanders: syphilis, it is stated, is unknown; scurvy is not unfrequent.

The following extracts on a disease, which is common in hot climates but rare amongst us, are interesting:—

“The most frequent of all spasmodic diseases in Iceland is the Tetanus of new-born infants, which is almost endemic in the adjoining island of Vestmanney. It usually commences on the fifth, sixth, or seventh day after birth, with a rigidity of the muscles of the nucha, at first temporary and occasional, and then more continued; the rigidity extends to the jaws and throat, so that deglutition becomes difficult, and the mouth can scarcely, or not at all, be opened. Gradually the muscles of the back become tetanically contracted; then convulsive motions arise, during which the head is powerfully drawn backwards, and the face becomes livid and convulsed. These attacks return more and more frequently, and are now of longer duration, and at length every part of the body becomes stiffened with spasm. In almost every case the infant dies before the close of the seventh day after birth.

Nearly three-fourths of all the infants—usually about twenty per annum—born in the island of Vestmanney, perish from this disease, and in Iceland not more than one in ten infants, who are affected, is saved.

It is difficult to account for the much greater frequency of the disease among the inhabitants of the one island than of the other. Some have conjectured that it is owing to the people in Vestmanney living more upon certain sea-birds.

The treatment of this disease is exceedingly difficult. Internal remedies seem to have little effect: what has proved most useful in my practice is the rubbing in of an ointment, consisting of one ounce of the ung. hydrarg. cinerei and two drachms of powdered opium, after the administration of purgative enemata, upon the neck and back every hour: the internal exhibition of the tincture of musk at the same time may be resorted to with advantage.”

Among the more frequent *chronic* diseases among the Icelanders is *induration of the liver*: we certainly were not prepared to expect that a disease, which is usually supposed to appertain more particularly to hot climates, was of so frequent occurrence in the frozen regions of the north. The following description of it by our author is worthy of notice.

“Induration of the liver is a very common (*admodum vulgaris*) disease in this island. We meet with numerous invalids who, for a number of years, sometimes from an early period of life, have suffered from a dull oppressive pain in the right hypochondrium, which is usually found to be more or less distinctly enlarged. They are usually affected with dyspepsia, constipation, loss of appetite, and general debility. In many cases, the swelling of the side, after extending more and more until almost the entire abdomen becomes occupied, becomes soft and fluctuating. The induration has then been followed by suppuration; and the contents of the hepatic abscess may at length be discharged either into the cavity of the peritoneum, or outwardly at the umbilicus or at some other point of the abdomen. I have often opened these abscesses with the knife, and given exit to an almost incredible quantity of most fetid pus, blended in some cases with hydatids and loose floating substances, like partly-dissolved cysts: these cases have usually done well ultimately. In other instances the hepatic induration never passed into the suppurative process, but the greater

part of the viscus is converted into a large steatomatous mass. On examining the abdomen after death in such cases, we often meet with numerous hydatidiform bodies, either attached to the liver or floating loose. In a very remarkable case of hydatidic degeneration of the hepatic parenchyma, which occurred in a man 30 years of age, the liver was found on dissection to be immensely enlarged and looked like a huge leather bag filled with water; on dividing it, nearly twenty pounds of pure serum flowed out.

These diseased states of the liver often commence in youth, and continue for a great number of years before the viscus becomes seriously altered."

Another Icelandic disease is one, too, whose *habitat* we usually associate with warm climates—*Lepra orientalis*.

"I have observed," says Dr. *Thornstensen*, "three species of the disease here. The *first* and most frequent of these is characterised by the following symptoms: impairment of all the mental and bodily faculties, roughness of the voice, a scorbutic livid aspect of the countenance, fætor of the breath, and a greater or less loss of the sensibility of the surface, and of the sense of touch. In various parts dark-coloured patches make their appearance on the skin, which is there always somewhat raised and more or less insensible; these spots or livid tubercles are sometimes observed on almost every part of the body, face, and extremities.

After a time, they pass into fætid lardaceous sores, which in some cases are attended with pain, and in others with a want of feeling in the parts. The whole organism of the body becomes vitiated, the senses of sight and hearing become weaker and weaker, the eyes are sometimes utterly destroyed, and the cavities of the orbits are occupied with foul ulcers, the bones of the nose and palate become soft and carious, and occasionally the brain itself is involved in the general morbid decay. The duration of this form of lepra varies from two to ten years or upwards: from the character of its symptoms I have been in the habit of designating it the Scorbutic Lepra.

The *second* species is called by the natives *limafallsyki*, *Lepra decidua*; its diagnostic character being the tendency of the fingers and toes to mortify and fall off. The disease commences with loss of sensibility in the fingers or toes of one of the hands or feet: there is usually no swelling, but there is always a burning pain around the affected part; the integuments burst, an ulcer is formed, and, after the lapse of some time, one or more bones come away in a carious state.

The surface of the body, at the same time, is usually the seat of a squamous eruption, and the muscles of the extremities become excessively wasted and feeble; the functions, however, of the brain and other viscera &c. are not apt to suffer. So great is the insensibility of the limbs in some cases of this form of lepra, that the patients feel little pain from amputation of the diseased extremity; the substance of the muscles is found to be converted into a semi-cartilaginous tissue, and the divided arteries pour out very little or no blood. Notwithstanding these serious changes, the stump will often heal favourably; and, even after the loss of more than one limb, patients have been known to live for several years without any severe suffering.

The *third* and rarest form of lepra met with in Iceland is most closely allied, if not identical with the *Lepra Arabica*. The integuments of almost every part of the body become indurated, squamous, insensible and elephantine; the muscles and all the other organs are attenuated and wasted, although the appetite usually remains good; and the cerebral functions are always more or less impaired. There is no tendency to the formation of ulcers, as in the preceding form of the disease.".....

The following memoir is one by Dr. *Cornuel on Dysentery*, as observed by him at Guadaloupe.

There is little that is novel or very interesting in it, and we shall therefore only allude to one or two of the author's remarks on the treatment of some of the forms of the disease.

Opium is certainly the most important of all remedies, and is required in almost every variety of the disease. As a matter of course, its administration as to dose, frequency of repetition, and so forth, must depend on the severity and peculiarities of each case. The combination of ipecacuan and opium is of especial benefit in numerous examples. Of late years, a pill containing these two ingredients with calomel, and known by the name of the *English pill*, has been used with remarkable success at Cayenne by Dr. *Segond*, and more recently by Dr. *Cornuel* at Guadaloupe. The formula is eight grains of powdered ipecacuan, four of calomel, one of the watery extract of opium,—to be divided into six pills; one to be taken every two hours.

In some of the milder and more chronic forms of dysentery, Dr. *Cornuel* has found much benefit from the use of mild aperients, such as Epsom salts in the dose of one or two drachms dissolved in four ounces of herb-tea, or manna in the dose of half an ounce, taken early in the morning; an opiate having been administered on the preceding evening at bed-time. The chloruret of sodium, with small doses of morphia, was administered both by the mouth and in enemata with excellent effects, when there was reason to believe the presence of slight ulceration of the intestinal mucous membrane.

Researches on the Structure of the Cortical Substance of the Cerebral Convolutions, by Dr. *Baillarger*.—The object of the author is to shew that the cortical surface of the nervous centres is distinctly stratified, consisting of several alternating layers of grey and white medullary matter, and that these strata may be aptly compared to the alternating plates of different metals or other substances in a Voltaic pile.

After minutely describing numerous anatomical examinations of the cortical substance of the brain in man and in the lower animals, he sums up the results of his enquiries in the following, among other, conclusions:—

“1. The cortical substance of the cerebral convolutions consists of six layers alternately grey and white, proceeding from within outwards. If we examine a thin slice of the grey substance placed between two pieces of glass, the six layers appear alternately transparent and opaque.

3. The white strata, which exist in the thickness of the cortical grey substance, are formed of two rows of vertical fibres.

14. The superposition of six strata, alternately of white and grey nervous matter, in the cortical substance of the brain, suggests the idea of a galvanic pile.

15. This analogy between the structure of the cerebral surface and the arrangement of a galvanic apparatus may be adduced as an argument in favour of the following two propositions.

The nervous, like the electrical action, is in relation to surfaces and not to masses. The nervous influx, like the electrical stream, is transmitted by surfaces.”

The opinion that there is some analogy between electricity and the mysterious cause of nervous action is now admitted by many of the leading

physiologists of the present day. It is therefore reasonable to expect that there are some features of resemblance between the anatomical arrangements of the nervous centres and those of a galvanic apparatus. Different opinions have been held by different anatomists as to the part of the nervous system which may be most aptly compared to a pile.

Rolando fixed upon the cerebellum; he says—

“ If an apparatus composed of different non-metallic substances, such as schistus, charcoal, muscular substance, and cerebral substance, and if the electrical organ of the gymnotus and torpedo, composed of an albumino-cartilaginous and other similar substances, is known to generate a great quantity of electrical fluid, why may not a similar principle be developed by the numerous layers of the yellow and cineritious matter of the cerebellum?”

Our author, while he does not impugn the accuracy of *Rolando's* conclusion with respect to the cerebellum, alleges, with considerable shew of reason, that, if electrical action is developed by the nervous centres, it is much more probable that the seat of this development is not in one part only, but rather that it is diffused over their entire extent. “ Assuredly,” says he, “ if the Italian anatomist has been led from the circumstance of the superposition of two laminæ of nervous matter to affirm that the cerebellum may be compared to a voltaic pile, how much more readily must he have admitted the same thing for the brain, had he been aware of the stratified structure of its surface, in which I have shewn that six alternating laminæ can be proved to exist?” He adds, “ in a future memoir I will shew that a similar arrangement can be demonstrated in the surface of the cerebellum itself, and also of the spinal cord; so that this stratified structure is common to the entire extent of surface of the nervous centres. But it is not on the surface alone of these centres that such an arrangement exists; it is well known to be quite obvious in the substance of the corpora striata, the tubercula quadrigemina, and in the tuber annulare also.”

In confirmation of his views, that the nervous centres may be aptly compared to a galvanic apparatus, Dr. *Baillarger* next alludes to the minute anatomy of the medullary matter; and suggests that the innumerable fibres, which it everywhere sends into the cineritious matter, may be regarded as so many conducting points which draw off the nervous or galvanic power.

The following paragraph is interesting.—

“ If we consider that in those animals, which are highest in the scale of intelligence, the brain is the most convoluted, and presents therefore the largest extent of surface; and if to this consideration we add that not only is delirium much more frequent in diseases of the superficial than of the deep-seated parts of this organ, but also that in dementia it is usually the cortical substance that is found atrophied or otherwise diseased, we cannot hesitate to attribute important functions to the cerebral surfaces: indeed they seem to be the parts that are most essential to the performance of the functions of the nervous system.”

Appended to this memoir are two lithographed engravings, which beautifully illustrate the stratified structure—consisting of six layers alternately of white and cineritious matter—of the cortical substance of the cerebral convolutions. The memoir is altogether well worthy of the attention of the physiologist, and will doubtless attract the notice of subsequent writers on the anatomy of the nervous system.

The next memoir is a most lengthy and elaborate one on the

Statistics of Acute Pleuropneumonia by Dr. *Pelletan*, chief clinical clerk of M. *Bouillaud* at the Hôpital de la Charité. As we have noticed its leading conclusions in the Foreign Periscope of the present number, we have no intention of enlarging upon the subject at present. Besides, the article itself is one of those most wearisomely and unnecessarily minute productions which issue so frequently from the *Bouillaud* section of physicians in France. Thus seventy-five cases, the reports of which occupy nearly fifty pages, occupy the first part, and other forty pages are taken up with tabular views and comparisons. Our readers are aware that we are no admirers of the arithmetical school of physicians, who strive so hard to reduce the phenomena of diseases and the principles of their treatment to certain rules, which may have all the exactitude of numerical calculation. Medicine, no doubt, may be improved and simplified, and much, it will be admitted, has been done during the present century to effect this important end; but no rational man, we think, can expect that ever it will be reduced to the certainty of an exact science. The very nature of an organized living frame, as that of man, made up of such varied and such complicated machinery, and obnoxious to so mysterious and never-ceasing a variety of internal and external agencies, all tending to disarrange its wonderful economy, must for ever forbid this Utopian fancy. Let it however not be imagined for a moment that we are at all inclined to disparage the usefulness of statistical tables of diseases, or to condemn any attempts to discover the comparative value of different lines of treatment by such arithmetical calculations as M. *Bouillaud* and his admirers so enthusiastically recommend. But we have seen quite enough of medical practice to be assured that no two cases of the same disease are in every respect and entirely alike, or that exactly the same line of treatment is equally adapted to each. Every case of disease has its peculiarities, and requires its special modifications of treatment. To expect therefore that we shall ever be able to lay down precise rules as to the amount of blood to be drawn, or, to use the French expression, *formuler la saignée*, in a disease like pneumonia, and these rules to be applicable to all patients, and in all seasons and years alike, is at once chimerical and dangerous.

But we must now pass on to notice the series of—

Memoirs on Poisoning, by the distinguished toxicologist of France, M. *Orfila*. Our limited space utterly precludes us from following him through these elaborate and most valuable papers; and even if we had more room at our command, it would be impossible to do justice to them within the ordinary bounds of a single article. Suffice it therefore to say that, in the first place, he has described a vast number of experiments on dogs, and also a few which he has made on the bodies of human beings who have died from the effects of arsenical poisoning: for the details of these we must refer the reader to the original. The following are some of the important conclusions which he has deduced from his laborious researches.*

* We have already briefly noticed them in this Review for last January—vide Foreign Periscope, p. 226.

1. That arsenious acid, introduced into the stomach or applied to the subcutaneous cellular substance in dogs, is quickly absorbed and received into the circulating fluids; and that it is thus conveyed to, and penetrates, every part of the animal economy.

2. That when it is applied in the state of a fine powder to the cellular tissue, there is not more than from one grain and a half to two grains actually absorbed, however large the quantity that may have been applied; and that this small quantity is sufficient to cause death, since it is impossible to attribute this result to the local irritation, which is usually inconsiderable.

3. That more is absorbed, although the precise quantity cannot be ascertained, when the poison is introduced into the stomach.

4. That arsenious acid acts in a similar manner in the case of human beings, although we may presume that a larger portion requires to be absorbed to occasion death with them than with dogs.

5. That, it is practicable, by the aid of certain chemical processes, to detect the arsenic which has been thus absorbed.

6. That, for this purpose, experiments must be made separately on the blood, the viscera, and the urine; since, at a certain period after the poison has been absorbed, it is no longer discoverable in the blood, although it still exists in notable quantity in the substance of the viscera, and in the urine; and at a later period it can no longer be detected in the viscera, while it may still be found in the urine. On two occasions, by examining the blood drawn from patients fourteen hours after the swallowing of the poison, a sufficiently large quantity of metallic arsenic was obtained from it to satisfy us that probably traces of its presence might have been appreciable, even if the analysis had not taken place for ten or fifteen hours later; and as to the viscera, it has been most distinctly proved that the arsenic may be discovered in them for several days afterwards.

7. That if, against all probability, no arsenic can be detected in the blood, viscera, or even in the urine which may be in the bladder at the moment of death, we are not to conclude with certainty that there has not been any poisoning at all; for it is quite possible that the absorbed poison may have been completely eliminated and discharged with the urine passed during the life of the patient: hence the necessity of preserving all the urine which may be voided by any person who is suspected of having taken arsenic.

8. That to extract from the blood a sufficient quantity of arsenic, we do not require more than a few ounces; and therefore that it will be judicious, independently of the propriety of the practice to subdue any existing inflammatory symptoms, to bleed every suspected patient, for the purpose of obtaining blood for chemical analysis.

9. That, although we may detect in the majority of cases the arsenious acid in one of the very vascular viscera, such as the spleen or liver, which has been previously dried, it is always preferable to act upon several of them at the same time, as the proportion of the absorbed poison may be too minute to warrant a decided affirmation of its presence in any one.

The process recommended by *Orfila* to detect the presence of arsenious acid in the blood and in the substance of the viscera, is to make a strong decoction of them, previously dried and cut into small pieces, in pure distilled water, to treat this with sulfhydric acid, evaporate it to dryness, then

carbonise the residue with pure concentrated nitric acid, submit the carbonised mass to the action of boiling water, and introduce the filtered fluid into Marsh's apparatus.

In this way, by treating *half only* of the liver of *M. Lorrin* who poisoned himself in June of last year, he discovered distinct traces of the existence of arsenic; and the same satisfactory results were obtained in a still more remarkable case, that of *Nicolas Mercier* who had been buried upwards of five months before the body was examined. By carbonising the liver with nitric acid, and boiling the charred mass in distilled water, and then introducing the filtered liquor into Marsh's apparatus, the presence of arsenic was ascertained beyond the possibility of doubt.* In the following case, in which the patient recovered after swallowing nearly a coffee-spoonful of arsenious acid, the presence of the metal was detected in the blood which had been drawn from the arm for the purpose of relieving the inflammatory symptoms. It was first dried in a porcelain vessel with four grains of pure potassa; the dried mass, which weighed about two ounces and a half, was then decomposed by means of five ounces of the purest nitric acid; it became immediately charred. The carbonised mass, bulky and dry, was boiled in distilled water, and when this was introduced into Marsh's apparatus, at least a score of minute but brilliant arsenical spots appeared. Besides the cases now mentioned, others have occurred since the publication of *M. Orfila's* memoir, in which the detection of arsenic in the bodies of persons who had died, or were suspected to have died, from the administration of this poison, was most satisfactorily made out by the process which we have described: in one instance the detection took place fifteen months after the decease of the person. Well, therefore, may *M. Orfila* say—

"In future, crime will often be pursued with success even into its deepest and last refuge; for without doubt several of the poisons, which act by absorption, will henceforth be detected in the tissues of the animal economy. Researches undertaken with this view and founded on the experiments which I have recorded will ere long resolve this great problem of legal medicine, and will doubtless at the same time explain and illustrate many obscure points in physiology and therapeutics."

M. Orfila proceeds to detail a series of experiments performed on dogs by which he has been able to prove most distinctly—1. That in poisoning with the tartrate of Antimony, whether it be introduced into the stomach or applied to a wound, this salt also is quickly absorbed into the blood and penetrates the tissue of the viscera, where it remains only a short time, especially if these viscera are not secreting organs; and—2. That, after having left the viscera, it is eliminated with the urine and probably also with some of the other secretions. The rapidity, with which the antimonial salt is absorbed into and eliminated from the system, is much greater than in the case of the arsenious acid: thus after the lapse of even a few hours no traces of it can be detected in the blood, while it may still be distinctly discovered in the viscera, especially the liver and kidneys, and in the urine.

* The reader is referred to another case, detailed in the *Foreign Periscope* of this Review for January of last year, where the presence of arsenic was detected in a corpse three years after interment.

The process recommended by *M. Orfila* is very nearly the same as that which we have described for the detection of arsenic: the dried viscus or viscera are charred with pure nitric acid, and the carbonised mass is boiled for half an hour with hydrochloric acid; the solution, filtered, is then introduced into Marsh's apparatus: antimoniated hydrogen is quickly evolved, and if this be inflamed a great portion of the metal is deposited. For a full account of the discriminating characters between the spots or traces left by the two metals, antimony and arsenic, we must refer our readers to the original memoirs.

In several cases *M. Orfila* has succeeded in detecting the presence of antimony in the urine of the human subject. 1. In the case of a patient affected with pneumonia and to whom 120 centigrammes* of the tartrate of antimony had been administered in the course of 24 hours, he was able to obtain a sufficient quantity of the metal from the urine, to exhibit it to the members of the Academy in their sitting last April. 2. In another case, which occurred in an old woman who had taken 60 centigrammes of the salt in the course of 24 hours without its producing either vomiting or purging, the urine, voided twelve hours after the administration, being evaporated, carbonised, and then treated in the manner already described, afforded unequivocal traces of the presence of the metal. 3. The liver, kidneys, and spleen taken from an aged inmate of the Salpêtrière, who died fifteen hours after having taken five decigrammes of the tartrate, yielded distinct traces of antimony.

M. Orfila closes his remarks in the following words:

"If the recent experiments of *M. Blacke* prove that certain very active vegetable poisons are absorbed and penetrate all the organs of the body in the course of a few seconds—*Majendie* had already observed this with phosphorus—it follows from mine, that the antimonial tartrate after its absorption does not remain in the blood, or at least not in a quantity sufficiently appreciable to be detected by Marsh's apparatus, more than one hour after the poisoning has taken place.

The arsenious acid remains very considerably longer in the circulating fluids; as I have been able to detect it in the blood of dogs three hours afterwards, and in the urine of the human subject at least 13 hours after the administration of the poison. But however this may be, it is curious, although not surprising, to find that the antimonial and arsenical salts, after having left the blood and being deposited in different tissues of the body, remain much longer and in larger quantities in the secretory than in any of the other viscera, before they are completely eliminated from these viscera into the secreted fluids."

In a subsequent memoir our indefatigable author pursues a similar line of enquiry with respect to the salts of Copper, as he had already done with those of Arsenic and Antimony; and he most satisfactorily proves that this metal also may be detected in the fluids, the viscera, and some of the secretions, several hours after one of its salts, as the sulphate or the acetate, has been taken into the stomach. We regret that we cannot afford space at present for further details, and must therefore urgently recommend all who take an interest in chemistry, physiology, or in legal medicine, to peruse and study

* For an account of the decimal system of weights now used in France, vide the Foreign Periscope of the present number.

the original memoirs for themselves. To the practical physician they suggest many topics for instructive reflection; more particularly as shewing him with what rapidity certain metallic remedies, which he is in the daily habit of prescribing in various diseases, are absorbed into the circulation and conveyed into the texture of the different organs of the body. The science of therapeutics cannot fail to receive many curious and useful hints from such a consideration.

The remaining memoirs in this volume will not detain us long. There is a long, and we had hoped an interesting, one on the important subject of re-vaccination by M. Sedillot, the President of the Vaccine Committee. It extends to upwards of 100 pages, and yet we may safely assert that it does not communicate a single novel fact nor indeed any series of valuable data on the subject which it professes to treat of. The greater part of it is occupied with a most unnecessary description of variola, varicella and vaccinia. The author denies that small-pox ever occurs in the same individual twice,* or even that it ever occurs in a person who has passed through the *genuine* cow-pox. He asserts that the preservative power of the latter against the former disease is *absolue et illimitée*; and he therefore condemns all proposals to re-vaccinate as not only quite unnecessary, but as hurtful by disseminating the idea that the protection afforded to the vaccinated person is only temporary. We have no intention to canvas the various *assertions*, for they are nothing else, of M. Sedillot, and will refer our readers to a carefully drawn up article on the subject of vaccination and re-vaccination in the number of this Journal for April of last year.†

The value of M. Lecanu's paper, entitled,
New Researches on Human Urine, may be judged of from the following conclusions with which he sums it up:—

1. The urea is secreted in equal quantities, during equal periods of time, by the same individual.
2. The uric acid also is secreted in equal quantities, during equal periods of time, by the same individual.
3. The urea and the uric acid are secreted in different quantities, during equal periods of time, by different individuals.
4. The variable quantities of urea, secreted by different individuals during equal periods of time, are proportionate to the age and sex of the persons—being greater in men than in women, and in women than in old persons and children.

* M. Sedillot mentions, as a most convincing proof of the accuracy of this statement, that the sum of 12,000 francs were deposited in the hands of the receiver-general of finances at Paris by a M. Gatti, to be given to any one who should produce a case of the genuine recurrence of small-pox, and that the reward has not been claimed by any one. (It is not said whether the offer has been withdrawn.) We have however the authority of Dr. Gregory, and indeed of almost every author who has written on small-pox, that second attacks of small-pox in the same individual do occur occasionally: vide also the *Medico-Chirurgical Review*, for last July, p. 516.

† In the numbers also for July, p. 193, and for October, p. 555, 1839, will be found some instructive extracts, from the writings of several authors both in France and Germany, upon this most interesting subject.

5. Those constituents of the urine which are fixed and undecomposable by heat, such as the earthy phosphates, the chloride of sodium, and the alkaline sulphates and phosphates, are secreted in different quantities, not only in different individuals, without having any relation to age or sex, but also in the same individual during equal periods of time.

The accuracy of these conclusions being established, "we are enabled to determine," says M. Lecanu, "1, if the secretion of the urea and uric acid in any patient continues, or not, to go on regularly as in a state of health; 2, if in the same patient the secretion of these elements continues, or not, within the ordinary limits which it exhibits in healthy individuals of the same age and sex; and lastly, if under the influence of disease and the treatment which is adopted for its relief, the secretion of the urea, the uric acid, and of the saline matters experiences, or not, any changes—during equal periods of time, as for example during 24 or 48 hours—in reference either to the manner in which it is effected, or to the quantity of each of the elements which it produces."

The last Memoir is entitled—

Vaginal Cystocele operated on in a New Method, and is communicated by M. Jobert, one of the surgeons of the St. Louis Hospital in Paris. The following extract will enable our readers to judge of the operation.

..... "I applied myself to effect a diminution of the tumor without causing almost any loss of substance in the part, and without exposing the patient to the risk of much hæmorrhage. These results I hoped to obtain in the following manner. With the nitrate of silver I marked out upon the tumor two transverse lines about half an inch wide, and about an inch apart from each other, and by repeating the application several times, at intervals of a few days, I at length destroyed, gradually and without any inflammatory accident, the entire thickness of the wall of the vagina in the cauterised portions. This being effected, I then with a bistoury cut (*ravivais*) the edges of the surfaces which had been cauterised. The intermediate space between the two incisions being pushed upwards, the bleeding surfaces were easily brought together and retained thus by means of a twisted suture. The seven needles which I used were contained in sheaths or canulæ, so that they (the needles) might be withdrawn, and the sheaths only be left in their place for the application of the ligatures."

To prevent the contraction of the bladder during the process of healing, an elastic gum catheter was introduced and left in it. The sheaths were withdrawn, some on the seventh, and the others on the tenth and twelfth days after the operation. The result of the case was most satisfactory, the woman being able to walk, and ultimately to resume her employment as a washerwoman, without any return of the tumor.

M. Jobert has repeated the operation in a second case with equal success. He has also succeeded by the same method in effecting a cure in several cases of prolapsus of the uterus accompanied with great relaxation of the parietes of the vagina.

CRANIA AMERICANA ; OR, A COMPARATIVE VIEW OF THE SKULLS OF VARIOUS ABORIGINAL NATIONS OF NORTH AND SOUTH AMERICA ; TO WHICH IS PREFIXED AN ESSAY ON THE VARIETIES OF THE HUMAN SPECIES : illustrated by seventy-eight plates and a coloured map. By *Samuel George Morton*, M.D. Professor of Anatomy in Pennsylvania College, Philadelphia, &c. pp. 296, folio. J. Dobson, Philadelphia ; Simpkin, Marshall and Co. London, 1839.

DR. MORTON'S method and illustrations in eliciting the elements of his magnificent Craniography, are admirably concise without being the less instructively comprehensive. His work constitutes, and will ever be highly appreciated in constituting an exquisite treasury of Facts well adapted, in all respects, to establish permanent organic principles in the natural history of Man.

While an extraordinary character is thus assigned to Dr. M.'s essay on the ground of its being a system of Facts, selected with discrimination and arranged with judgment, the inquiry may be made preliminarily—*What are Facts*, with a view to limit the term to a definite acceptation? Facts then are things accomplished so as to become deeds, or they are things discerned so as to be existences; and they present themselves to our attention under three distinct forms. 1. Facts are *Casual*, when their reality, as incidents, is admitted exclusively on the veracity of an observer and their own verisimilitude. 2. They are *Demonstrable* when, as circumstances or beings, they can be reproduced and ascertained by many different persons re-instituting the original processes of observation and experiment. 3. They are *Perceptible* when, as mental experiences, they can be renewed by many different persons repeating the original process of reflection on consciousness, by which they were first discovered. Now, in being manifest physical entities, the subjects of Dr. M.'s "comparative view" exhibit the genuine attributes of Facts, in being deposited in his own and other specified Collections accessible to the scrutiny of naturalists and physiologists retracing or extending the same course of investigation, they possess all the attributes of demonstrable Facts; and hence they will remain a splendid and imperishable monument of Dr. Morton's exertions for the advancement of Science, and an excellent authority to guide the researches of philosophers in determining the features and disposition of nations.

At the opening of a brief preface we find Dr. Morton stating that his chief design has been to give accurate delineations of the Crania of more than forty Indian nations, Peruvian, Brazilian and Mexican, together with an extended series from North America, from the Pacific Ocean to the Atlantic, and from Florida to the region of the Polar tribes. He has devoted especial attention to the singular distortions of the skull, caused by mechanical contrivances in use among various nations—Peruvians, Charibs, Natches, and the septs inhabiting the Oregon territory. His materials in this department are ample, and he represents them as having enabled him to give a full exposition of a subject which was long involved in doubt and controversy. Subsequently, he describes the processes by which these denatural-

izing disfigurements are produced. Here however it may be cursorily noted, that these contrivances do not change the structure or qualities of the brain, but merely alter its form so as to give the head an unnatural shape, rendering it altogether an unfaithful or delusive source of observation for the Physiologist in conducting his researches, to establish characters of organic and mental distinction, in persons, families, and nations. In an introductory essay on the varieties of the Human species, Dr. Morton embodies a train of interesting practical observations. It is a remark of his, and he illustrates it—that the condition of man, under his infinitely varied circumstances, is less the effect of coercion than of choice; and, as we judge, the induction is confirmed by historical facts drawn from the traditions or records of every age and country. The doctor declines offering any solution of the motives which impel the native of a cold or hot, a temperate or torrid region, to prefer the dwellings or resorts of his fathers to all other lands, however pregnant with the seeds of happiness and comfort. In our matured opinion, this “choice” results entirely from the secret, and seldom perceptible, promptings of a primitive faculty of the mind, the innate love of home and country which intuitively cherishes the spirit of pure genuine patriotism.

Extensive emigrations, as Dr. M. thinks, have been mostly confined to the temperate zones, and to the civilized communities of modern times, in which the spirit of migratory enterprize is without limits. He adopts the opinion that, from remote ages, the inhabitants of every extended locality have been marked by certain physical and moral peculiarities, common among themselves and serving to distinguish them from all other people. Thus, at this time, the Arabians are precisely what they were in the days of the patriarchs; the Hindoos are altered in nothing since they were first described by the earliest writers: nor has any difference been made in the skin and hair of the Negro, by the influences of three thousand years: in like manner, the characteristic features of the Jews may be recognised in the sculpture of the temples of Luxor and Karnak, where they have been depicted for nearly thirty centuries. This identity of physical characteristics, preserved through numberless generations, and often under very dissimilar conditions, has occasioned various speculations respecting the origin of the human family. The prevalent belief is derived from the Sacred Writings; and, in their literal and obvious interpretation, these teach us that all men have descended from a single original pair. Hence, says Dr. M. it has been hastily and unnecessarily inferred, that the differences now observable in mankind are owing solely to vicissitudes of climate, locality, habits of life, and various collateral circumstances. Without attempting to pursue this intricate question in detail, he inquires whether it is not more consistent with the known government of the universe, to conclude that the same Omnipotence that created man would adapt him at once to the physical as well as the moral circumstances in which he was to dwell upon the earth? It is indeed difficult, he supposes, to imagine that an all-wise Providence, after having by the deluge destroyed all mankind excepting the family of Noah, should leave these to combat, and with seemingly uncertain means, the various external causes that tended to oppose the great object of their dispersion; and we are left to the reasonable conclusion, that each race was adapted from the beginning to its peculiar local destination: in other words,

Dr. M. assumes, that the physical characteristics which distinguish the different Races, are independent of external causes. Such appear in his mind, to have been the primitive distinctions among men; but hostile invasions, the migratory habits of some tribes, and the casual dispersion into remote localities, have a constant tendency to confound these peculiarities; and the proximity of two races has uniformly given rise to an intermediate variety partaking of the characters of both, without being identical with either: these are called *Mixed* races. Such is Dr. Morton's view of the rise of Races—a theme which has engaged the ingenuity of many naturalists, and proved the occasion of that diversity of opinion which is so frequent in human researches.

Instructed by authentic history in the Sacred Scriptures; we entertain a strong inclination to derive all the existing Races of Mankind from the three sons of Noah, "of whom was the whole earth overspread," and through whose "families, after their generations, the nations were divided upon the face of the earth, after the flood." With this exact authority then, we lean to the belief that the primary races of men were three—the Shemites, Hamites and Japhethites; that, during the century intervening between the Deluge and the Dispersion at Babel, these original races would progressively divide into generic families, notwithstanding "the whole earth was of one language and of one speech;" and that, after the Deity had "confounded their language that they could not understand one another's speech," their division into new tribes and families and races would be more frequent and numerous. We may also imagine that a supernatural distinction by physical and moral characters, giving origin to new races, would accompany the miraculous confusion of tongues—for, it is manifest, that such a result could easily be produced by the Divine Energy which created man, and endowed him with the wonderful attributes of body, life and mind, at the beginning. Another and, in our judgment, a principal efficient cause sufficiently well adapted to promote the multiplication of races, in primeval times, was the intermarriages of brothers with sisters through several generations, and thus impressing on their progeny the distinctive features of the Pair with whose segregation from their kindred this practice necessarily commenced. Illustrations of this process are unfortunately too evident in the facts of organic and mental peculiarities, often those of degeneracy, being propagated extensively by hereditary transmission. Thus far therefore, we agree with Dr. Morton in representing the physical characteristics which distinguish different races, as being mainly independent of external causes; but, from the force of observation, experience, and history, we conclude that the agency of external causes does exert a decided, though imperceptible progressive influence in altering the human structure and economy.

Much erudition and research have been employed by physiologists, with a view to establish the *unity* of the Human species: the affirmative opinion, as Dr. M. observes, is maintained by Linnæus, Blumenbach, Cuvier, and many other distinguished naturalists: yet on the contrary, Virey has divided mankind into *two* species; Dumoulin, into *eleven*; and Bory de St. Vincent into no less than *fifteen*; while the French Professor Broc has attempted to establish several *subgenera*; and thus, as we think, he adduces decisive evidence of the facility wherewithal your fantastic visionaries can overleap the barriers of reason and nature. With the "affirmative opinion" on this

speculation, ours is in perfect harmony; for, in the obvious proposition—that “the human species must have had one pair at least for their first parents”—and that the identity of organic structure and function, and all their essential elements, is complete in every diversity of the human kind—we recognize authority for considering the *unity* of the Human Race as a self-evident fact; a fundamental truth susceptible of perfect demonstration. Where it is proposed to distribute the Anthropic genus into two or more species, the proposition ought to be supported by the conclusive authority of distinct and manifest specific characters. Such a proposition as this however, as we have ever yet seen it, has clearly the aspect of a speculative assumption, conceived by fancy, propounded by vanity and unsustained by a single trace of probable testimony, analogical or inductive.

Dr. Morton notices the anthropological systems of Linnæus, Buffon, Blumenbach and Cuvier, adding succinct remarks on their several merits. He admits the classification of Blumenbach to be “obviously imperfect;” but, for reasons of convenience, he adopts it for the ground-work of his introductory essay, resting himself content with an approximation to accuracy in this difficult department of natural science. Two leading features constitute the bases of most of the attempted classifications of the human species; and one of these methods is denominated the *physical*, the other the *ethnographic* system. In the former, mankind are grouped in great divisions characterised by similarity of exterior conformation; in the latter, the arrangement is based on analogies of language. Each of these systems has its advocates, to the exclusion of the other; but it seems reasonable, in Dr. M.’s mind, to regard that method as the most natural and comprehensive which is derived from both these sources, as well as from all others which tend to establish analogies among men. In order therefore to combine, as far as possible, all these advantages, he proposes to consider the Human species as consisting of *Twenty-two* families. At the same time, he premises that these families are not assumed to be identical with *Races*, but merely as groups of nations possessing, to a greater or less extent, a resemblance of physical and moral character, and language—some of them retaining the peculiarities of the aboriginal races to which they belong, while others are of very diverse extraction and of comparatively recent origin. According to our philosophy, the Head affords by far the best “physical and moral”—we prefer the terms *organic* and *mental*—characters for distinguishing the different Races of men; and, as experience shows, these characters subsist with an extensive or general uniformity readily appreciable by disciplined observation. With other physiologists, we regard the head as a formation constructed by brain, skull and integumental tissues, and we recognize the *organic* characters in its shape and size, with the relative proportions of its parts, and their constitutional quality or temperament. We know, moreover, that the brain constitutes the primary mould from which the skull and head derive their configuration; and hence, it is our doctrine that the brain and skull are naturally adapted to be employed for the like purposes as the entire head, in a system of anthropological classification. After the same manner, we retrace the *Mental* characters through the shape, size and other conditions of the brain, as indicated by the peripheral forms of the head and skull. We may fairly contemplate the brain as an aggregate of organic instruments, and the Mind as an aggregate of powers or faculties; and,

assured are we, that the cerebral instruments and mental faculties are co-existent and severally co-operative—each individual of the latter naturally using its own peculiar one of the former, in the exercise of its appropriate functions. Hence, on these principles, we may seek to trace the mental characters of disposition and capacity by inspection of the head, and the accuracy of the results is susceptible of trial by their correspondence with the mind's manifestations—in thought and feeling, discernible by reflection on consciousness; in speech and composition, in act and conduct, discernible by observation. We are desirous, in fine, of seeing the Head and its constituent organs adopted, in their forms, relations and conditions, as the source of elementary principles, in the anthropological and psychological systems.

Availing himself of Blumenbach's arrangement as respects the great divisions of mankind, Professor Morton constructs his system of anthropology on a distribution of the whole Human Species into five races and twenty-two families, with their numerous varieties. We follow his order and nomenclature, in exhibiting a concise view of his system.

I. THE CAUCASIAN RACE includes the Caucasian, Germanic, Celtic, Arabian, Libyan, Nilotic and Indostanic families. He represents this Race as being characterised by a naturally fair skin, susceptible of every tint; the hair fine, long and curling, and of various colours; the skull large and oval, with its anterior portion full and elevated; the face small in proportion to the head, of an oval form, with well-proportioned features; the nasal bones arched, the chin full, and the teeth vertical. The Caucasians are distinguished for the facility with which they attain the highest intellectual endowments.

II. THE MONGOLIAN RACE comprehends the Mongol-Tartar, Turkish, Chinese, Indo-Chinese and Polar families. The characters of this Race, are a sallow or olive-coloured skin, which appears to be drawn tight over the bones of the face; the hair long, black and straight; the beard thin; the nose broad and short; the eyes small, black, obliquely placed, with the eyebrows arched and linear; the lips turned out, the cheek-bones broad and flat, and the zygomatic arches salient; the skull oblong-oval, somewhat flattened at the sides, with a low forehead. In their intellectual character, the Mongolians are ingenious and imitative, and moderately capable of cultivation.

III. THE MALAY RACE embraces the Malay and Polynesian families. Its characters appear in a dark complexion, varying from a tawny hue to a very dark brown; the hair black, coarse and lank; the eyelids drawn obliquely upwards at the outer angles; the mouth and lips large; the nose short and apparently broken at its root; the face flat and expanded, with the upper jaw projecting, and the teeth salient; the skull high and squared or rounded, and the forehead low and broad. The Malaysians are active and ingenious, and they possess all the habits of a migratory, predaceous and maritime people.

IV. THE AMERICAN RACE comprises the American and Toltecan families. Its characteristic marks are, a brown complexion, with long, black, lank

hair, and a deficient beard; the eyes black and deep set; the brow low; the cheek-bones high; the nose large and aquiline; the mouth wide, the lips tumid and compressed; the skull small, wide between the parietal protuberances, prominent at the vertex, and flat at the occiput. The Americans (the ancient people and their descendants, he means) are naturally averse to cultivation and slow in acquiring knowledge, they are restless and revengeful, fond of war and wholly destitute of maritime adventure.

V. THE ETHIOPIAN RACE contains the Negro, Caffrarian, Hottentot, Oceanic-Negro, Australian and Alforian families. It has for characters, a black complexion, with black woolly hair; the eyes large and prominent; the nose broad and flat; the lips thick, and the mouth wide; the head long and narrow; the cheek-bones prominent, the jaws projecting and the chin small. In disposition, the Negro is joyous, flexible and indolent; while the many nations which compose the Ethiopian race present a singular diversity of intellectual character, of which the far extreme is the lowest grade of humanity.

We will here introduce a passing remark on the Professor's anthropographical classification, and its elements. Instead of adopting the forehead as a chief "physical," and "intellectual" capacity as a principal "moral," character in the distinction of Races, he might have drawn three kinds of *organic* characters from the Head, by viewing it under a threefold distribution, corresponding with the three recognized lobes of the brain. From the Mind also, in a similar way, he might have obtained three kinds of *mental* characters, by considering its faculties under the threefold distribution into affections, sentiments, and intellectual powers. Such an arrangement would have yielded the principles of a consistent, though limited, scientific system; for, as in individuals, both families and races may be distinguished by the predominancy of one lobe of the brain over the other two, and of one order of the mind's faculties over the other two—for example, the anterior cerebral lobe may exhibit an ascendancy of size and energy over the other two, while the intellectual powers are displaying a high degree of vigour and activity over the two other orders of mental faculties. We find a clear illustration of this example in Dr. M.'s system; for, in "*the large oval head*" and its "*full elevated forehead*," co-existing with the *highest* "*intellectual*" *aptitude*, we distinctly perceive a remarkable confirmation of the psychosopical doctrine—that the anterior cerebral lobe, by its several parts, performs the functions of organic instruments, appropriated to the higher intellectual powers.

Conformably to the method preferred by him, Dr. Morton displays considerable ingenuity and research in using the physical and ethnographic materials wherewith he characterizes the numerous varieties, arranged under his twenty-two families of the Humankind. Notwithstanding many strong inducements to accompany him closely through this beautiful and highly interesting portion of his Essay, we feel reluctantly obliged to limit our observations to a few cursory notes, selected from his pages with a view to elucidate that natural correspondence which subsists between the shape of the head and the character of mind, in active life, which we regard physiologically as constituting the most important fundamental principle in Mental Science—not useless in education, government and legislation, in moral,

religious and medical philosophy. We arrange our Notes numerically, adding the pages of Dr. M.'s volume with the object of facilitating reference.

i. p. 11.—Koordistan is inhabited by two sorts of people, the clansmen or tribesmen or military order, and the peasants or cultivators of the soil, and the difference in physiognomy between them is so perfectly distinguishable that it would be impossible for the latter to pass himself for his countrymen of nobler race. The peasant has a much softer and more regular countenance, sometimes showing the Grecian features: the tribesman is hard-featured, with a thick prominent forehead, abrupt lines, and grey or blue eyes usually fixed in a kind of stare: he holds the former in a state of absolute bondage. The Koords treat their women more kindly than the Turks or Persians, and have a better idea of domestic comfort: yet they are haughty and cruel, fond of war and pillage, and fight among themselves when they have no common enemy.

ii. p. 12.—The unmixed Greeks are above the middle stature, having fine proportions and a graceful mien: the forehead is high, expanded and but little arched, so that it forms, with the straight and pointed nose, a nearly rectilinear outline: the face is a beautiful oval, and small in proportion to the voluminous head. The Roumelian population of Greece the most resembles her ancient inhabitants in moral traits: they are hardy, brave, and warlike, and have never been completely subjected by the Turkish aggressors. The voluminous head and lofty forehead co-exist universally with supreme intelligence; and, in the displays of this, the ancient Greeks have never yet been equalled.

iii. p. 13.—The Roman head differs essentially from the Greek in having the forehead lower and more arched, the nose strongly aquiline with the nasal bones much depressed between the eyes. In the ancient busts and statues, we discern the genuine Roman type consisting in a large flat head, a low wide forehead, a face broad and square, with a short thick neck, and stout broad figure. Every page of the Roman history confirms the observation—that, associated with the large flat head and its low wide forehead, the character of persons and nations is distinguished by energetic manifestations of selfishness, pride, cruelty and stern perseverance.

iv. p. 13.—The Germans are well known for their middling stature, robust form, light hair, and fair florid complexion. In them, the head is large and spheroidal, the forehead broad and arched, the face round, the eyes blue, and the neck rather short. Their moral character is marked by decided personal courage, great endurance of fatigue, firmness and perseverance, with a strong attachment to their families and their native land. Intellectually, they are conspicuous for industry and success in the acquisition of knowledge. With a singular blending of taciturnity and enthusiasm, they rival all modern nations in music, poetry and the drama: nor are they less eminent for their critical attainments in language and the exact sciences.

v. p. 16.—The Celtic people possess strongly marked features. They are tall, athletic, little prone to obesity, and their physical strength corresponds to their muscular proportions. They have the head rather elongated, the forehead narrow and but slightly arched; their brow is low straight and bushy; the eyes and hair are light, the nose and mouth large, the cheek-bones high, the face angular, and the expression harsh. They are slow but

laborious, and endure fatigue beyond the sufferance of other men; in disposition, they are frank, generous and grateful, yet quick-tempered, pugnacious and brave to a proverb. We have the following most faithful graphic statement from the pen of M. Bory de St. Vincent, a very clever French philosopher. "The Celts and Gauls have become the modern French, of whom the Franks of the middle ages are not the parent stock, as those assert who trace their genealogy to the latter barbarians. It is from their Celtic ancestors that the French derive their vivacity, their inconstancy, their impetuous courage devoid of perseverance, a vanity often puerile, and a remarkable quickness of perception, together with that levity which is the jest of a neighbouring nation."

VI. p. 18, 19.—In the Arabian family, the face represents an elongated oval, with a delicately pointed chin and a high forehead; the eyes are large, dark and full of vivacity, the eye-brows finely arched, the nose narrow and gently aquiline, the lips thin and the mouth expressive. Some very opposite elements are blended in the moral character of the Arabs; they are the children of impulse; at one moment destroying or plundering the unresisting traveller; and the next receiving with open hospitality the stranger whose necessities have driven him to their tents. Except in their wars and pastimes, they are indolent; vanity is the characteristic of all classes; their covetousness and duplicity are remarkable; their politeness is extreme; their sobriety constitutes a national feature.

VII. p. 21.—Originally, the Hebrews or Jews were a pastoral people; but, in after-times, they occupied the cities and territory of Palestine, under a changeful sort of government by judges and kings. Since the extinction of their nation by the remorseless Romans, they have been ill-used outcasts in every land. Their physiognomy is familiar in the receding forehead, the elongated face, the large and aquiline nose. In its general bearing, the Hebrew head very faithfully indicates the mental proclivity of this most singular race. Whatever merits attach to their name for the display of high intelligence, these are due to individuals inspired with extraordinary energy in the exercise of extraordinary missions; but their devoted attachment to their religion and their patient endurance of adversity, are among the most striking traits of their character. Dispersed by a divine judgment, they are found almost every where on the habitable earth, recognized by the same features, the same obstinacy of purpose, and the same undeviating form of worship.

VIII. p. 27.—On the ruins of their ancient monuments, and their mummies, we retrace the physical lineaments of the primitive Egyptians; and these remains commemorate two prominent varieties of this extraordinary family. There is a remarkable resemblance among the innumerable heads sculptured in the temples of the Nile; and one who is accustomed to examine them, becomes so familiar with the Egyptian physiognomy that when other races are introduced, as the Jews or Negroes, the eye can detect them without difficulty. There is also a singular accordance in conformation between the sculptured heads and the real ones taken from the Theban catacombs. One of the varieties is known by lowness and narrowness of the forehead: the other presents the full development of the Caucasian head: the former greatly predominates in the sculptures, and has been regarded conjecturally as characteristic of the Egyptian race. The nose was

rather long, and joined the head much in the Grecian manner: the eye was elongated and rather oblique, the lips well formed, the chin rounded and moderately full, and the whole expression of countenance mild and pleasing; the hair was long, straight and generally black; and the person appears to have been spare, with long limbs and delicate hands and feet. The antiquity of the Egyptian nation, and their skill in the arts and sciences, have been proverbial in all ages; and it is a remarkable fact that the first glimpse we obtain of the Egyptian history and manners, shows a people already advanced in the arts of civilized life: the same customs and inventions that prevailed after the accession of their eighteenth dynasty, are found to have been established in the remote age of Osirtasen the cotemporary of Joseph. Their antiquity and learning are illustrated by the facts—they had completed the pyramids of Memphis within three hundred years after the era assigned to the Noachian deluge; they wrote their hieroglyphic characters on papyrus as early as the time of Cheops, two thousand years before Christ; they discovered and constructed the arch more than three thousand years ago: the Greek scroll is common in the tombs of the Pharaohs: and the so-called Doric column and entablature ornamented the porticoes of Beni-Hassan, before sculpture was an art in Greece: hence it is evident, that this singular family had attained a high degree of civilization and refinement at a time when the western world was still involved in barbarism, when the history of Europe had not yet begun, and long before Athens, Carthage and Rome were in existence. Physiological research will, one day, and that not a distant one, succeed in discovering facts sufficient to establish the conclusion that the "Learning of the Egyptians" was begun, continued and consummated by a race possessing the "full development of the Caucasian head."

ix. p. 32.—Among the Hindoos in general, the face is oval, the nose slightly aquiline, the mouth small, the teeth vertical and well-formed, the chin rounded and generally dimpled; the eyes are black, bright and expressive, the eye-lashes long, the brow thin and arched; the hair is long, black and glossy, the beard very thin. The Hindoo head is small and narrow, especially across the forehead which is only moderately elevated. By nature, the Hindoos appear to be a mild, sober and industrious race, warm in their attachments and fond of their children; but their love of the marvellous, fostered as it is by a fantastic religion, is almost without a parallel among nations. They are of a timid disposition and not inclined to cruelty; yet their avarice, which is extreme, leads them readily to commit murder for the most trifling acquisition. They practise deception with infinite art, to which falsehood and perjury form no obstacles. Their intellectual character is distinguished among the present Asiatic nations; but their learning has been very much devoted to comments on their sacred books, which are extremely numerous. They have had many admirable writers in poetry and the drama: they excel in some branches of mathematics, and especially in algebra: their antique architectural remains are of a stupendous kind, and consist chiefly of rock-hewn temples ornamented with elaborate sculpture. According to Bishop Heber's observations, the criminal calendar of India is generally full of gang-robberies, incendiarism, and analogous crimes perpetrated by native Hindoos, notwithstanding the apparent mildness of their manners; and the number of children who are decoyed aside, and murdered

for the sake of their ornaments is dreadful. For all these horrors, the national system of religion is mainly answerable, inasmuch as whatever moral lessons their sacred books contain—and they are very few—are shut up from the mass of the people, while the direct tendency of their institutions is to evil. The Hindoo temper is decidedly good, gentle and kind. As a nation, the people are sober, industrious, affectionate to their relatives, faithful to their masters, easily attached by kindness and confidence; and, in case of the military oath, they are of admirable obedience, courage and fidelity in life and death. But their morality does not extend beyond the reach of positive obligations; and, where these do not exist, the Hindoos are oppressive, cruel, treacherous, and every thing that is bad. Thus, in a most remarkable manner, the Bishop's dismally instructive observations corroborate those of Dr. Murray Paterson, published more than sixteen years ago in the *Phrenological Transactions*, and afterwards introduced into vol. II. of the *Phrenological Journal*, in an admirable article intituled an *Essay on the coincidence between the natural talents and dispositions of Nations, and the development of their brains.*

x. p. 43.—The modern Turks are of a middling stature, with an athletic form and well-proportioned limbs. Their head is round, their eyes dark and animated, and the whole face expressive and intelligent. In manner, they are proverbially courteous and taciturn; but their true character is marked by violence of passion, cruelty and vindictiveness. They are intelligent and ready in the acquisition of every kind of knowledge, and they would soon assume an elevated rank in literature, were it not for the trammels of superstition and fatalism.

xi. p. 44.—The Chinese are rather below the middle stature, stout-limbed and inclined to corpulency. Their head is large, rounded and somewhat conical, owing to a high retreating forehead. From inspection of specimens, the Chinese skull appears to be oblong-oval, in its general form: the frontal bone is narrow in proportion to the width of the face, and the vertex is prominent: the occiput is somewhat flattened: the orbits are of moderate dimensions and rounded. The Chinese eye is small, half closed and drawn obliquely upwards towards the temple; the upper eyelid projects a little beyond the lower; the eyebrows are black, highly arched and linear: the nose is small, flattened towards the nostrils, broad at its root, and separated from the forehead by a strongly marked depression. Contemplated in their moral character, the Chinese are distinguished among themselves by mildness and urbanity; by a wish to show that their conduct is reasonable, and generally a willingness to yield to what appears so; by docility, industry, subordination of the young, respect for the aged and for parents; and by their acknowledging the claims of poor kindred. These, however, are virtues of public opinion; and, of course, they have more show than reality, in particular cases; for, on the other hand, the Chinese are specious but insincere, jealous, envious and distrustful to a degree. Conscience for them has few checks but the laws of the land, and a little frigid ratiocination on the fitness of things which is generally ineffectual to restrain, when the selfish and vicious propensities of our nature may be indulged with impunity. The Chinese are selfish, cold-blooded and inhumane: in the punishment of criminals, by the practice of torture they are barbarously cruel: those in authority entirely disregard human suffering and human

life, when the infliction of the one or the destruction of the other can be made subservient to the acquisition of wealth or power. Although, in letters, in science, and in art, the Chinese remain the same now what they were many centuries ago, yet their intellectual character is deserving of especial attention. That nation cannot be viewed with indifference which possessed an organized government, an army, a written language, historians and philosophers, coeval with the inspired Historian of the Creation. They have their national music and their national poetry; but, of sculpture, painting and architecture, they have no just conceptions; and their national pride prevents their adopting the arts of other countries. Their faculty of imitation is extraordinary, and their mechanical ingenuity is universally known to be pre-eminent. They possess a copious literature, both ancient and modern; they have known and practised the art of Printing, for eight hundred years; and their written language, with the same characters hitherto used, is of an extreme antiquity. Vessels of Chinese porcelain, not less than four thousand years old, have been discovered in the Egyptian catacombs, with inscriptions easily read by the scholar versant in Chinese philology. On three of these vessels is inscribed the legend—*THE FLOWER OPENS, AND LO! ANOTHER YEAR*. The Japanese bear a striking resemblance to the people of China, with the same features in an exaggerated degree. They are short, with heavy limbs, large heads and sunken eyes; and, like their “continental neighbours,” they are laborious artificers, less ingenious, equally superstitious. For the psychological naturalist, it might be a legitimate and favourite inquiry—to determine demonstrably the constitution of mind and the co-existing configuration of head possessed by the people, who devised, enacted, and have perpetuated those social institutions which caused and continue the apoplexy of progressive civilization among so many of the oriental nations.

xii. p. 48.—The Aracanese are accustomed to flatten the heads of their children by means of a piece of lead, applied soon after birth; they slit and distend their ears to a frightful degree: and they are represented as being the most uncultivated and barbarous people of the Indo-Chinese family. By this detestable process of artificially flattening the forehead of infants, the head is deformed and the parts of its brain forcibly driven from their natural positions and relations; and, by necessary consequence, the head thus disfigured ceases entirely to be a natural subject of observation.

xiii. p. 48.—At its superior part, in the Siamese, the forehead is narrow; between the cheekbones, the face is broad; the chin is pointed, so that the whole contour seems rather lozenge-shaped than oval. The occipital portion of the head is nearly vertical; and, compared with the anterior and sincipital divisions, it is very small. The lateral halves of the head are not symmetrical: from the ear upwards, it rises to a great height, the posterior part of the coronal region being very prominent. Altogether, the Siamese head is peculiar: its diameter, from the front backwards, is uncommonly short, and hence the general form is somewhat cylindrical: and, in most instances, the occipital foramen is placed so far back that, from the crown to the nape of the neck, the line is nearly straight. Notwithstanding the Siamese are said to be remarkable for filial respect and regard for their rulers, yet the national moral character appears to be at a very low ebb.

They are described as being suspicious, vacillating and cruel; servile and cringing to their superiors, in the extreme; arrogant and tyrannical to those who are below them in rank. Their virtues and their vices are venal: the services of the judge and the assassin have each their price: sordid oppression and priestcraft, allied with wretchedness and filth, everywhere abound. An intelligent traveller regrets his not having met with one honest man in their land.

xiv. p. 49.—Among the inhabitants of Cochin-China, the general form of the face is round, so that the two diameters are nearly equal: the forehead is short and broad: the occipital portion of the head is elongated: they are a coarse featured people, and render themselves repulsive by the constant use of areca and betel, which reddens the lips and blackens the teeth. They are the gayest of the oriental nations; good-natured and polite, but extravagantly fond of etiquette. So versatile are their feelings and actions, that they have been compared to the monkey-race, whose attention is perpetually changing. They are active and warlike, but want industry and perseverance.

xv. p. 50.—In the Nicobar Islands, the natives compress the heads of newly-born infants, in such a manner as to flatten the occiput, and cause the teeth to project outwards. Their colour is a deep copper: they have thick lips and wide mouths. They live in a very uncivilized state and compel their women to cultivate the ground; hitherto, they have resisted all measures for the improvement of their condition.

xvi. p. 51.—The Samoyedes are seldom more than five feet high: they seem "all of a heap," have short legs, small neck and a large head, with the nose and face flat, and the chin projecting. They are an indolent and savage people, and extremely apathetic on all those subjects that excite the feelings of other men: their women often become mothers at twelve years of age.

xvii. p. 56.—With the nose short, depressed and flattened; the eye small, black, oblique and expressive; the face broad, compressed and very prominent, the Malayan has a large head, with its forehead low, moderately full and arched, while the occiput is much compressed, and often projecting at its upper and lateral parts. The Malays possess an active and enterprising spirit; but, in temper, they are ferocious and vindictive: caprice and treachery are among their characteristic vices: and their habitual piracies are often conducted under the mask of peace and friendship.

xviii. p. 59.—With the Polynesian islanders, the stature is middling and athletic; the forehead low, but not receding; the eyes black, bright and expressive. Between the aristocratic and plebian classes however, there exists a great disparity as respects stature, features and complexion. The privileged order is much fairer and taller than the other: their heads are better developed, and their profile shows more regular features, including the arched and aquiline nose. The indolent habits of this caste dispose it to obesity which often becomes extreme after middle life. The Polynesians are intelligent, imitative, and docile; their progress in elementary literature and the more useful arts has been rapid; and perhaps no people on the globe has ever been more amenable to the usages of civilized life and the doctrines of Christianity. Their intellectual capacities have been considered equal to those of the Caucasian race: this much however is true of them—that, al-

though they rapidly acquire ideas by means of their active perceptive powers, yet their reflective faculties have not hitherto expanded in proportion. In their uncivilized state, the Polynesians are singularly devoted to boxing, archery and boat-racing; but their most striking predilection is for maritime amusement and adventure. Their canoes are large, and constructed with great ingenuity: in these vessels they prosecute their wars, and undertake considerable voyages for profit or pleasure. The fondness of this people for the sea constitutes a national and predominating feature in their character: and, in their naval architecture, a high degree of ingenuity is conspicuous. —We should rejoice to meet with a clear and rational definition of the mental and organic agents, which co-induce and sustain this characteristic predilection for seamanship in the Polynesian mind.

xix. p. 64.—The Appalachian head is rounded; the nose large, salient and aquiline; the whole face triangular; the chest broad; the body and limbs muscular. The nations composing this great branch of the American Family are warlike, cruel and unforgiving: they turn with aversion from the restraints of civilized life, and have made little progress in mental culture or the useful arts. The co-existence and co-efficiency of the round-head with a ruthless disposition may be contemplated and ascertained in the feline tribe, from the lion or tiger down to the domestic cat; and the study will be facilitated by instituting observations on the head or skull of a parlour cat placed side by side with that of a hare or rabbit, for the purposes of comparison.

xx. p. 65.—The physical aspect of the Fuegians is altogether repulsive, and their domestic usages are said to heighten the defects of nature. These islanders are of low stature; have large heads, broad faces and small eyes, capacious chests and clumsy bodies, with great knees and ill-shaped legs. Their expression of countenance is vacant: they seem destitute of the usual curiosity of savages, caring little for any thing that does not minister to their present wants. Dr. Morton attributes the difference between the Fuegians and other American nations to the effects of climate and locality, and the consequent habits of life, tending to depress and brutalize the mind, and to impair the physical man. This excessive degradation in the Fuegian character proceeds from the preponderance of animality in the constitution of their mind and the structure of their head, combined with a weight of the phlegmatic temperament. With a large head, having a lofty broad forehead and high intelligence its inseparable associate, the dwellers in the dreary island of Tierra del Fuego would soon extricate themselves from the ungenial effects of its climate and locality.

xxi. p. 89.—The Caffers are tall, athletic and well-proportioned, with much natural grace of manner. Their head is large, with the forehead full and vaulted, the nose salient and aquiline, and the face a fair oval. Their physiognomy is remarkable in being a combination of the European and Negro features. This people is as much above the genuine Negro in morals and intelligence, as in physical appearance. The tribes resident near the English colony are less cruel and superstitious than some others; but their appeals to pretended sorcery in punishing crimes and in settling disputes, and the despotic sway of their chiefs, are taken for evidences of a great degree of barbarism.

xxii. p. 90.—One of the most singular varieties of the Human family

is that of the Hottentots; their stature is of the mediate class; their persons are big and clumsy, with fine limbs, and remarkably small hands and feet. Their head is large, the forehead low and broad, the face extremely wide between the cheek-bones, whence it retreats rapidly into a contracted chin. The Hottentots have but very vague ideas of religious obligations, although they are prodigiously superstitious. They are inveterately indolent and gluttonous, devouring every kind of animal garbage that falls in their way, without preparation; and, when thus gorged, they throw themselves down and sleep off the effects. They are susceptible of some improvement however, and have been converted into tolerably efficient soldiers; hence, in the large head with its low broad forehead, the main traits of their character are not unfaithfully indicated.

xxiii. p. 91.—Throughout the Indian Archipelago and in many islands of the Pacific ocean, the various peoples, collectively denominated Papuas, are extensively dispersed. They are easily recognized as members of the great Negro race, by their similarity of organic features and mental capacities. In them, the head is rounded, yet compressed in front and at the sides, with the forehead greatly depressed: their manners are savage, and they exhibit little aptitude for moral and intellectual improvement.

xxiv. p. 93.—The New Hollanders are of the full stature, with ample chests and thin bodies, with long slender limbs. Their face is frightfully ugly: it projects greatly from the head: the mouth is particularly prominent owing to its width and the great size of the lips: the nose is flat and broad, with the nostrils expanded: it is separated from the forehead by a deep sinus. The frontal ridges often overhang the eyes, while the forehead itself is low and slopes rapidly to the top of the head. They have fierce and vindictive tempers, and are passionately fond of war: they are perpetually embroiled in feud and bloodshed: even their courtship consists in a violent abduction of the object of their desire: through life, their women are treated with unparalleled cruelty. They are most disgustingly filthy in their persons, and gluttonous in their eating; their dances betray the licentiousness of their morals; they are all but incapable of civilization.

We have embodied these gleanings of "physical and moral" description as elements of an anthropological system wherein the distinction of Races might be grounded on essential differences in configuration of the head and co-existent essential differences in constitution of the mind. Although as sketches, they are necessarily imperfect, yet, in being recorded on the pages of this journal, they will remain accessible to the investigation of scientific naturalists. Dr. Morton deserves high commendation for care and faithfulness in constantly referring to the sources of his information and authority; and, while admiring his method in thus honourably citing these observations, we would persuade all travellers to note such differences with minute attention, and thus to simplify and increase the first principles of Psychology.

From Dr. M's. general observations on the barbarous nations composing the American Family, p. 65, we derive much new and most valuable insight into the peculiarities of organization and mind which characterize this remarkable people. In retracing these peculiarities, we limit our selections to his distinctions of national heads, and of national minds as manifested in modes of life and social institutions. After examining a great number of

skulls, Dr. Morton finds that the nations east of the Alleghany mountains, together with the cognate tribes, have the head more elongated than any other Americans; he applies this remark especially to the great Lenape stock, the Iroquois, and the Cherokees. To the west of the Mississippi, the elongated head again occurs in the Mandans, Ricaras, Assinaboins, and some other tribes. Yet, even in these instances, the characteristic truncation of the occiput is more or less obvious, while many nations east of the Rocky Mountains have the rounded head so distinctive of the race—as the Osages, Ottos, Missouris, Dacotas and numerous others. In Florida, the same conformation of head is common; but, as Dr. M. observes, some of these nations are evidently of the Toltecan Family, as both their characters and traditions testify. The head of the Charibs, as well of the Antilles as of Terra Firma, is also naturally rounded; and we may trace this configuration through the nations east of the Andes, the Patagonians, and the Chilian tribes. Flatness of the occipital portion of the Cranium probably characterizes a greater or less number of individuals in every tribe, from Tierra del Fuego to the Canadas. When these skulls are viewed from behind, their occipital outline is observed to be moderately curved outwards, wide at the occipital protuberances, and full from those points to the opening of the ear: from the parietal protuberances, there is a slightly curved slope to the vertex, producing a conical or rather a wedge shaped outline. As in this, there is no race on the globe, as Humboldt has observed, in whom the frontal bone is so much depressed, and the forehead is so small; but with Dr. M. we must admit that the lowness of the forehead is, in some measure, compensated by its breadth, which is generally considerable. Among a vast number of tribes, the flat forehead was esteemed beautiful; and this fancy has been the principal incentive to the moulding of the head by art. In many, the eyes are deeply set in the head; an appearance which is much increased by the low and prominent frontal ridges.

Dr. Morton divides the unsophisticated Americans into three great classes—those of Hunting, Fishing, and Agriculture, the pursuits on which they depend for subsistence. The first embraces most of the strictly nomadic tribes and a great proportion of the entire race. Those who on fishing subsist exclusively are not numerous. The natives of Tierra del Fuego, and the Flathead septa on the Columbia river, are among the proper piscatory tribes. Many nations inhabiting the Atlantic coast make their means of support a secondary consideration; some alternating it with agriculture, others with the chase. Many islanders, unacquainted with agriculture, are sustained for a great part of the year by fishing in the rivers and lakes; and, in the interval between the ending and recommencement of the fishing season, they are driven to the greatest extremities for food. Thus, the Shoshones west of the Rocky Mountains live more than half the year on roots alone; and the Ottomacs on the Orinoco are compelled for months together to assuage the cravings of nature by mixing with their food a large proportion of unctuous clay. It is remarkable that these piscatory people evince no fondness for the sea: they appear to be entirely destitute of inclination and spirit for maritime adventure. Before the arrival of the Europeans, a few of the American tribes were strictly agricultural: since that event, a much greater number have adopted the same mode of life. Among the former, are the lowlanders who occupy the plains and open land between

the Orinoco and the Amazon, in the south, and in the north, those who dwell between the great lakes and the Gulf of Mexico, and between the Mississippi and the ocean. Even with the most industrious of those tribes however, their agriculture was confined to the cultivation of Indian corn, the sweet potatoe, tobacco and melons. From the force of example, the Cherokees have become an agricultural nation, but, in Mexico, there are tribes who have led the peaceable life of cultivators of the soil, for some centuries, exempt from the contingencies to which the hunters are exposed. Many of these nations resort to the three modes of subsistence, employing the spring in fishing, the summer in agriculture, and the autumn and winter in hunting. Although the American originally obtained the horse through the European intruders; yet, from the first, he has managed this noble animal with surprizing dexterity. Strange it is however, that there scarcely exists an example, among the free Indians, of a horse being used for agricultural purposes.

Regarding the moral nature, or rather the mental manifestations, in the American savage, Dr. Morton's observations are distinguished by the best and strongest features of research, reflection and experience. He recognizes in the race, a boldness of physical development accompanied by a corresponding acuteness in the organs of sense; it is his opinion that, although Nature has done much in producing this acuteness, yet Education has contributed more to its perfection. We would allow ourselves to be led to the somewhat different induction, with reference to the Americans—that, in perfecting the sentient faculties and their organs, Education does much by increasing the quickness and range of their action, but Nature does much more by implanting great innate aptitude for instruction in the senses and great inherent energy in the organs through which these faculties execute their functions. With Dr. M. we reject the idle theory which attributes to the American Race, in comparison with the European, a physical inferiority, less hardness of constitution, lower powers of endurance. By day and by night, in summer and winter, over mountains and marshes, through rivers and forests, the Indian will pursue his determined course, whether his object be revenge on an enemy or food for his family at home. Human effort never exceeded his, in the patient sufferance of fatigue and hunger, of thirst and cold: but, he is incapable of servitude; under enslavement, his spirit sinks; and, with its fall, his physical energy perishes.

Dr. Morton has successfully studied the Americans; and he defines their character with much fairness; we take notes from his delineations. He represents cautiousness and cunning as its most prominent features, with a systematic vigilance which marks every action: their very politeness is a part of this cautiousness: they never express themselves with surprise. When an object interests an Indian by its novelty, he shews his gratification in a few subdued remarks or by a significant gesture: but it is difficult to betray him into enthusiasm. That taciturnity which is fostered by all his national usages, has its source in a concentrated cautiousness: this even appears in the marriage-ceremony which is often joyless and melancholy, as if it were rather the harbinger of sorrow than of happiness. Seldom do the pastimes of this people excite hilarity or heated feeling, unless the performers are stimulated by intoxicating drinks; in which case, as among more civilized men, a temporary madness unmasks the darkest passions, and the

natural reserve of the Indian gives place to extravagant mirth and the most brutal ferocity.

Courage and fortitude form strong traits in the character of an Indian; but he is remarkable for improvidence, the result of habitual indolence. It is usual to charge him with treachery; but, in most instances, he has only retorted the perfidiousness that has been heaped upon him by others: he has retaliated on the oppressors, who practise every iniquity to deprive him of liberty and life, who desire the extermination of his race. He is accused of inhospitality; but, as concerns this imputation, Dr. Morton becomes his apologist, and clears him of the contumely. Covetousness does not predominate in the character of an Indian: he is singularly content with the supply of present need: his mind is rarely harassed with the idea of future want: he craves not the house or the land of his neighbour, and shows an entire apathy to those possessions which are most prized by civilized communities. Hence it has come, that the tumuli of Mexico and Peru, though immensely rich in gold and silver, were never disturbed by the native inhabitants: the sepulchres of their fathers were desecrated and plundered by the sacrilegious hands of strangers.

At home the Indian is least to be admired: there, he is lazy, vicious and sensual; habitually cold to the gentler sex, and stern to his children; a drone and a despot. He is less swayed by superstitious fears than most other savages; and his religion is more distinguished for its poverty than its grossness: it is chiefly a simple theism, which acknowledges a good spirit who exerts a benign influence on the destinies of men, and an evil spirit who is held to be the author of all misfortunes. An untutored American observes no regularity in the time or manner of his worship: this is the mere result of occasion or impulse. He hears God in the winds and the cataract: he acknowledges the divine presence in all the appearances of nature, attributing them to One spirit not to a multiplicity of spiritual agents. He is not addicted to idolatry: he believes in the immortality of the soul, which is to enjoy in a future state the most exciting temporal pleasures—the pastimes of hunting and fishing—without fatigue or alloy. They cherish an extraordinary veneration for the dead; and this sometimes induces them, on removing from one part of the country to another, to disinter the remains of their deceased relations, and bear them to the new home of the tribe.

When compared with those of the Caucasian and Mongolian Races, the Americans appear to be of a decidedly inferior cast. They are not only averse to the restraints of education; but, for the most part, they are incapable of a continued process of reasoning on abstract subjects: their minds seize on simple truths with avidity, while they at once reject whatever requires investigation and analysis. As for their mode of thinking, manner of life, and social condition, they have kept these nearly unchanged since the primitive epoch of their existence. They have improved but little in the building of their houses and boats; their inventive and imitative faculties are of a very humble grade; they are destitute of all predilection for the arts or sciences; they experience great difficulty in comprehending any thing that belongs to numerical relations. However much the philanthropist may lament over the fact, it nevertheless is an established fact—that for thousands of years, the Indian mind has continued incapable of civilization.

Under the form of a foot-note, p. 29, Dr. Morton introduces a concise

but perfectly satisfactory disquisition on the supposed affinity between the Egyptians and the Negroes. In this, by pure induction from architectural, sculptural, pictorial, historical and other evidences, he arrives at the conclusion—that the ancient Egyptians is absolutely different and naturally superior, in morals and intelligence, to the Negro race. With reference to the physical character of the Egyptian, there is a source of evidence which he appreciates more highly than any other—he refers to the embalmed bodies from the Theban catacombs. These vast cemeteries were crowded with genuine Egyptians, whose remains even now retain almost every feature in perfection. Here are the very people who walked the streets of Thebes, with them who built Luxor and the Pyramids; and yet, among the thousands whose bodies the unholy hands of curiosity and avarice have dragged from their tombs, not one solitary Negro has been discovered. We admire this note as an eloquent and erudite contribution to the natural history of Man.

Another note of Dr. Morton's, p. 88, conveys the following observations. So certain is the great antiquity of the Negro race, as to have induced more than one philosopher to indulge in the conjectures—that this was the primitive stock of mankind, and that all the other varieties were derived from it alone, by the action of physical causes. According to accredited dates however, and in the words of a distinguished author, it is four thousand one hundred and eighty-nine years since Noah and his family came out of the ark. They are believed to have been of the Caucasian race; and since there is no ground for questioning the correctness of this belief, let it be assumed as a truth. Now, three thousand, four hundred and fifty-five years ago, a nation of Ethiopians is known to have existed: their skins were dark, and they differed widely from Caucasians in many other particulars: they migrated from a remote country, and took up their residence in the neighbourhood of Egypt. Supposing that people to have been descendants of Noah, their change must have been completed, and a new race formed, in seven hundred and thirty-four years, and probably in a much shorter period. According to Dr. Morton's views, this statement receives additional force from the recent discoveries in Egypt in as much as they show beyond all question that the Caucasian and Negro races were as perfectly distinct, in that country, upwards of three thousand years ago as they are now. Hence, he regards it as evident—that, if the Caucasian was derived from the Negro, or the Negro from the Caucasian, by the action of external causes, the change must have been effected in at most one thousand years: a theory which the subsequent evidence of thirty centuries proves to be a physical impossibility; and, for this reason, he insists that such a commutation could be produced by nothing short of a miracle.—Relatively to this question, our anthropological hypothesis involves the three-fold proposition—that Noah and his family were of an Antediluvian race superior perhaps to the Caucasian, in organic and mental endowment; that the three primary Races originated in the offspring of his sons; and that the foundation of distinct Families was then laid, their distinctions being subsequently completed and varied by the action of external, physical and social causes combined.

With feelings of unusual satisfaction with his matter and manner, his spirit and principles, as displayed in the Introductory Essay, we now enter with Dr. Morton on the field of skulls—his American Craniology, with its exquisite graphic, and its luminous descriptive, illustrations. He begins,

and we follow him, with the figures of Ancient Peruvian skulls, preceding them with the representations of an embalmed head, disinterred from a cemetery at Arica, and obviously a relic of antiquity. This head "has not all the characters of the Ancient Peruvian," nor does Dr. M. introduce it as "an unequivocal example of that race." With evident accuracy, he describes the forehead as extremely retreating, and partially moulded by artificial means; but the whole cranium is broader, both in its frontal and parietal diameters, than is common in the forementioned people. The sharpness of the superciliary ridges indicates the effects of a broad plate or bandage which has compressed the frontal bone and widened the entire head; apparently, it belonged to a person of distinction.

On the second plate, is figured the skull of a child not more than five years of age. Here, we are struck with the greatly inclined forehead, the extreme elongation of the whole head, and more particularly with the length of the occiput behind the ear; yet there is but little expansion of the head which, with the face, is narrow in proportion throughout. The third figure is that of a skull with a singularly flat and retreating forehead, and projecting face: the head, however, is not remarkable for narrowness; and, if any, a very slight degree of pressure has been applied to the frontal bone. This is the cranium of a woman about thirty years old: her entire desiccated body was obtained from the Arican district, with the hair very long, and retaining its natural black colour. With her, were found some pieces of an aromatic gum, and a small bag, containing some copper fish-hooks and small instruments of bone which were probably used in forming the meshes of nets or other fabrics. Five of the six skulls, discovered near the lake Titicaca, are strikingly like this female's, both as respects their general form, their narrow face, their small size, and their several diameters: yet they present more obvious marks of artificial modification.

Dr. Morton regards the relic, figured on the fourth plate, as furnishing an example of the head of the primitive Peruvians; and therefore, he takes it for a type of the cranial conformation of this people. Though the forehead retreats rapidly, there is but little expansion at the sides; and, from the face to the occiput inclusive, there is a narrowness that seems characteristic of the Race. Prefixed to the explanatory text, Dr. M. gives reduced outlines of his subjects: in this instance, the posterior view represents the skull elevated in that region without any unnatural width at the sides, and the vertical view sufficiently confirms the latter fact. This skull was found, about a mile from Arica, in a cemetery of the "ancient Peruvians." The body to which it pertained was placed in a squatting posture, with the knees drawn up and the hands applied to the sides of the head: the whole was enveloped in a coarse but close fabric, with stripes of red which had wonderfully withstood the destroying effects of ages.

On the fifth plate, there is a cranium strikingly analogous to the three preceding specimens, but the professor had not ascertained from what particular part of Peru the relic was procured. The intervention of art, in flattening this skull, is very manifest; yet the depression has been effected on a forehead extremely low by nature—for the lateral swell is not remarkable; and, in particular, the parietal protuberances are not much more inflated than those of the skull, previously set down as "a type of the cranial conformation of these people." Dr. M. concludes his section headed

" *The Ancient Peruvians*," with stating summarily—that the average internal capacity* of the Caucasian or European head is at least ninety cubic inches, and it will be observed, he thinks, that the three adult skulls, in the preceding series of ancient Peruvians, give an aggregate of two hundred and nineteen cubic inches, or a mean of seventy-three only. It will also be observed, he says, that the mean capacity of the anterior chamber is about one half of that of the posterior, or twenty-five to forty-seven; while the mean of the facial angle is but sixty-seven. Hence then, on the evidences afforded by this statement, by the results of Dr. M's. inestimable table of anatomical measurements, and by the universal physiological principle, that size of the brain is a chief measure of mental power or energy, we readily arrive at the induction—that these "Ancient Peruvian" skulls, taken as the type of a family must have pertained to a nation naturally much inferior in mental power to the Caucasian and Mongolian Races: in fact the people, whose skulls included brains of this shape and size, never could display a high moral and intellectual character: such heads never excelled in the arts nor did they ever earn the homage intuitively yielded, by civilized minds, to eminence in the sciences.

Before entering on his inquiry into the physical and intellectual character of the Ancient Peruvians, Dr. Morton premises some descriptive and explanatory remarks: from these we extract a condensed selection. Peru, he says, is a narrow strip of land between the Andes and the sea, bounded on the south by a desert. It possesses many natural advantages, in its climate, soil and situation, and these appear to have been fully appreciated by its aboriginal occupants; for, he adds, there is evidence that several populous nations held successive dominion in the country. Even before the advent of the Spaniards, history throws much light on one of these nations—that which was governed by the Incas. With respect to the others, little else is known than what can be gleaned from their monuments and cemeteries. Atacama, an arid region dividing Peru from Chili, was the favourite sepulchre of the Peruvian tribes for many ages; for, the doctor observes, while the climate tends rather to the desiccation than to the decay of the dead, the sand and salt of the desert have contributed to the same end; and, in consequence, the lifeless bodies of whole generations of the former inhabitants of Peru may now be examined, like those from the Theban catacombs, after the lapse of centuries, perhaps of thousands of years. The great number of desiccated bodies remaining in these regions, serves to convey an idea of the vast population that has, at different periods, derived its subsistence from that country. From an examination of nearly one hundred Peruvian skulls, in his own and other collections, Dr. Morton deduces the result—that Peru has apparently been peopled, at different periods, by two nations with Crania differently formed; and, he thinks, one of these is extinct, or

* Dr. Morton gives the precise measurements, both of capacity and size, for each individual subject, throughout his work; and, at p. 257, he adds an elaborate and most valuable "Table of Anatomical Measurements," accompanied by another exhibiting their mean results. He is also particularly careful in explaining his mode of taking these measurements, with descriptions of the instruments and processes he employed; they are altogether original and ingenious, and happily calculated to attain the desired ends.

at least exists only as blended by adventitious circumstances in various remote and scattered tribes of the present Indian race. That family which preceded the Incas, he designates the Ancient Peruvian of which the remains have hitherto been found only in Peru and especially in its Bolivian division. Their tombs abound on the shores and islands of the great Lake Titicaca, in the interalpine valley of the Desaguadera, and in the elevated valleys of the Peruvian Andes. Collao was the name of the country around this inland sea, and Tiaguanaco appears to have been the site of its chief city.

Dr. Morton institutes an exposition of the physical and intellectual character, the history and tradition of the Ancient Peruvians, and he grounds it on what information he could glean from their monuments and cemeteries. However meagre his facts may appear, he thinks they possess considerable interest, and the more so because few others are available. He admits that all his knowledge of their physical appearances is derived solely from their tombs—a necessarily imperfect source of information. This people, he says, appears to have been in no respect remarkable in stature: neither, except in the conformation of the head, did they differ from the cognate nations: in this, he finds no evidence of mechanical compression, but is satisfied that it appears to be of the natural form, unaltered by art. Altogether, the Ancient Peruvian head is small, greatly elongated, and narrow in its whole length, with a very retreating forehead: but, he states, it possesses more symmetry than is usual in skulls of the American race. The face projects, the upper jaw is thrust forward, and the teeth are inclined outward: the orbits of the eyes are large and rounded, the nasal bones are salient, the zygomatic arches expanded, and there is a particular simplicity in the sutures that connect the cranial bones.

Dr. Morton foresees the very probable supposition, “that a people with heads so small, and so badly formed would occupy the lowest scale of human intelligence.” Such however was not the case, as he says; and he proceeds “to show that civilization existed in Peru anterior to the advent of the Incas, and that those anciently civilized people constituted the identical nation whose extraordinary skulls are the subject of his present inquiry.” Now, since the doctor himself appears to feel that, in this instance, his position is wonderful or dubious—made sufficiently dubious by evidence on most pages and plates in his book, and its table of anatomical measurements—we will essay to exhibit the grounds of his opinion under a distinct and conspicuous arrangement.

1. Among the first European travellers in Peru, was Pedro de Cieca, an officer in Pizarro's army: and, although an unlettered man, he describes with simplicity and clearness whatever came under his observation. His chronicle*

* Pedro de Cieca: *Chronica del Peru*, Cap. cv.; 18vo. Anvers, 1554. This curious book was translated into English, with the title, *The Seventeen Years' Travel of Peter de Cieca, through the mighty kingdom of Peru, and the large provinces of Carthagen and Popayon in South America*; by John Stevens; 4to. London, 1709. There was also an Italian version; 12mo. Venezia, 1560. Dr. Morton likewise refers to Acosta; *Historia de las Indias*, Lib. vi. Cap. 14; 4to. Sevilla, 1590. Acosta's *Natural History* was translated into French, German, Italian, and English, by Edward Gremestone; 4to, London, 1604.

contains the following passage; and after Dr. M. we give it entire.—“Tiaguanico,” says Pedro, “is not a very large town, but it is deserving of notice on account of the great edifices which are still to be seen in it. Near the principal of these, is an artificial hill raised on a ground-work of stone. Beyond this hill, are two stone idols resembling the human figure, and apparently formed by skilful artificers. They are of somewhat gigantic size, and appear clothed in long vestments, differing from those now worn by the natives of those provinces: and their heads are also ornamented. Near these statues, is an edifice which, on account of its antiquity and the absence of letters, leaves us in ignorance of the people who constructed it; and such indeed has been the lapse of time since its erection, that little remains but a well-built wall, which must have been there for ages, for the stones are very much worn and crumbled. In this place also, there are stones so large and so overgrown that our wonder is excited to comprehend how the power of man could have placed them where we see them. Many of these stones are variously wrought; and, some having the form of men, must have been their idols. Near the wall, are many caves and excavations under the earth; but, in another place more to the west, are other and greater monuments, consisting of large gateways and their hinges, platforms and porches, each of a single stone. What most surprised me while engaged in examining and recording these things, was that the forementioned gateways were formed on other great masses of stone, some of which were thirty feet long, fifteen wide, and six thick. Nor can I conceive with what tools these stones were hewn out; for it is obvious that, before they were wrought and brought to perfection, they must have been vastly larger than we now see them. Before I proceed to a further account of Tiaguanico, I must remark that this monument is the most ancient in Peru; for it is supposed that some of these structures were built long before the dominion of the Incas, and I have heard the Indians affirm that these sovereigns constructed their great buildings in Cuzco after the plan of the walls of Tiaguanico; and, they add, that the first Incas were accustomed to hold their court in this place. Another very curious fact is, that in the greater part of this territory there are no quarries nor rocks whence the materials for these structures could have been derived. In the presence of Juan de Varagas who commands here, we asked if these edifices were built in the time of the Incas? But they laughed at the question, adding that they did not know who built them, but that they had a tradition of their ancestors, that these structures appeared in a single night.” These statements and many others to the same purpose, Dr. M. adds, are confirmed by Diego de Alcobaza, the vicar-general, who also visited Tiaguanico and has left an account* of the wonder he saw at that place.

II. It will be observed by the preceding narration, Dr. M. goes on to say, that tradition among the Peruvians attributed these Cyclopien structures to an era long antecedent to the appearance of the Incas, and this tradition is sustained by history; for the city of Tiaguanico did not fall into the hands of the Incas until the reign of Mayta Yupanque the fourth king, at which period the edifices in question must have been in existence for centuries, and were already in a state of ruin and decay. Garcilaso de la Vega, himself of the royal Peruvian family, admits that these ruins existed at the time the country was conquered by his ancestors; and a Peruvian author, two centuries and a half nearer our own time, states (Mercurio Peruvians, Lima, 1791,) that Tiaguanico is indisputably anterior to the monarchy of the Incas, and speaks, as if from personal observation, of a gigantic pyramid and colossal human figures cut from solid rock, in-

* Garcilaso de la Vega: Comentarios Reales, que tratan del origen de los Yncas, reyes que fueron del Peru, de su idolatria, leyes, &c. con la historia general del Peru; folio, 2 tomes, Lisboa y Cordova, 1609—17.

dicative of the power and genius of a great nation. The first invasion of the Incas was followed by the erection of some temples to enforce the new religion, but their only great architectural monument in these parts, the Temple of the Sun on the island of Titicaca, was not built until the reign of Tapac Yupanque the tenth Inca, early in the fifteenth century. Herrera also alludes to a tradition of the Indians that these edifices have been built by Amazons at a remote era, nor are the Incas mentioned as having any part in their construction. Humboldt says (*Monuments*, I. p. 5), "it is probable that the edifices called in Peru by the name of *Inga-pilca*, or Buildings of the Inca, do not date farther back than the thirteenth century. Those of Vinaque and Tiaguanico were constructed at a more remote period: so also were the walls of unbaked brick, which were made by the ancient inhabitants of Quito. It is to be desired that some intelligent traveller would visit the banks of the great lake Titicaca, the province of Collao, and more especially the elevated plain of Tiaguanico, which is the centre of an ancient civilization in this region." Dr. McCulloch (*Researches*, p. 406) remarks, in confirmation, "that a certain degree of demicivilization prevailed in the nations adjoining the Peruvian empire, which was not derived from their communication with the latter."

III. It will now be asked, in Dr. M's words, "What evidence can be adduced to prove that the people, whose remains we are considering, were the same with those who have left the architectural monuments of Tiaguanico and Titicaca?" He regards the fact as established by the observations of Mr. Pentland,* an Englishman who had recently visited the upper Peruvian provinces. He states that in the vicinity of Titicaca, he had "discovered innumerable tombs, hundreds of which he entered and examined. These monuments are of a grand species of design and architecture, resembling Cyclopean remains, and not unworthy of the arts of ancient Greece or Rome. They therefore betokened a high condition of civilization: but the most extraordinary fact belonging to them is their invariably containing the mortal remains of a race of men, of all ages, from the earliest infancy to maturity and old age, the formation of whose crania seems to prove that they are an extinct race of natives who inhabited upper Peru above a thousand years ago, and differing from any mortals now inhabiting our globe. Specimens of their skulls are now in London and Paris: they are remarkable for the extreme extent behind the occipital foramen; for two thirds of the weight of the cerebral mass must have been deposited in this wonderfully elongated posterior chamber: and, as the bones of the face were also much elongated, the general appearance must have been rather that of some monkey family than of human beings. In the tombs, as in Egypt, parcels of grain were left beside the dead; and, it was another singular circumstance, that the maize or Indian corn so left, was different from any that now exists in the country." Mr. Pentland expresses his decided opinion, "that the extraordinary forms thus brought to light of day, after their long sojourn, could not be attributed to pressure or any external force, similar to that still employed by many American tribes; and, in confirmation of this view he adduces the opinions of Cuvier, Gall, and of many other naturalists and anatomists. On these grounds, he is of opinion that they constituted the population of these elevated regions, before the arrival of the present Indian population which, in its physical and moral characters, offers many analogies with the Asiatic population of the old world."

IV. As the Professor thinks, "the preceding facts appear to establish two important propositions: *first*, that the primitive Peruvians had attained to a considerable degree of civilization and refinement, so far at least as architecture and sculpture may be adduced in evidence, long before the Incas appeared in their

* Report of the Fourth Meeting of the British Association, p. 624; and Waldie's Journal of Belles Letters, for 1834.

country: and *secondly*, that these primitive Peruvians were the same people whose elongated and seemingly brutalized crania now arrest our attention; and, it remains to inquire whether these are the same people whom the Incas found in possession of Peru, or whether their nation and power were already extinct at that period." We should rather have preferred the inquiry, Whether the people, with elongated and brutal skulls, were the *Sculptors* of stone idols, resembling the human figure, gigantic in size and clothed in long vestments, and of colossal human figures cut from solid rock, and the *Architects* of enormous gateways with their hinges, platforms and porches, of a gigantic pyramid, and of innumerable tombs of a grand species of design and architecture, resembling Cyclopean remains and not unworthy of the ancient Grecian and Roman artists? But we must accompany the Professor to the completement of his inquiry.

V. Entering on it, he says—the modern Peruvian empire had existed upwards of four hundred years at the time of the Spanish conquest, so that its origin may be dated somewhere about the year MC. of our era. Now it appears, he argues, that among the first military enterprizes of this new family, was the conquest of Collao, which possessed a productive soil and a warlike population, and embraced within its confines the Lake Titicaca from which the Incas pretended to have derived a supernatural origin. Every effort was therefore made to subdue and destroy the Collas. The Inca Yupanque waged against them a war of extermination; and, we are told by Herrera (*Historia de las Indias*, Dec. III. Lib. IX, c. 4.) that, "in some of the towns, he left so few persons alive that inhabitants were afterwards sent from other parts of Peru to colonize the wasted districts: that in order further to depopulate the country, the natives were banished from it in large bodies, and dispersed through other provinces of the empire: and yet such was the dread in which the new dynasty held these warlike people, that they forbade more than a thousand of them to be within the walls of Cuzco at a time, lest they should attempt some revolutionary enterprize. It therefore appears that no means were left untried to subdue and exterminate the people of Collao. Yet the Doctor adds confessingly, how far such a system persisted in at intervals for more than two centuries, could have annihilated a whole nation, I shall not attempt to decide.

VI. When the Spaniards took possession of these provinces, they found them inhabited by barbarous tribes; and the islands of the Lake Titicaca, which had once been highly cultivated, were then waste and vacant. Upon the lake, were seen rafts made of the reed called by the natives *totoras*, and on these rafts whole families made their home, tossed here and there upon the waters by every change of wind. They were in so brutalized a state that when asked to what nation they belonged, they replied! "We are not men, but Uros," as if they did not consider themselves as belonging to the human species. Were these Uros, the professor inquires, the remains of the savage colonies sent from other parts of Peru to supplant the Collas? this inference bears at least the stamp of probability: but, he admits, it still does not aid us in ascertaining whether the Collas themselves were the remains of the primitive civilized Peruvians.

VII. Garcilaso describes the Peruvian tribes near the sea-coasts, to whom he applies the collective name of Yuncas, as living in the utmost barbarism at the advent of the Incas. In proof of this statement, he adduces their mythology, which accorded divine attributes to every thing in which they observed any dominant excellence. Thus, says he, they worshipped the fox for his cunning, the deer for his swiftness, and the eagle for the perfection of his sight. These superstitions, however, are not more surprising than those of the primitive ages of civilization in the old world; and there appears throughout the Spanish historian an evident disposition to depreciate the character of the ancient tribes, in order to palliate the cruel measures which were resorted to by the Incas for their subjugation. Garcilaso himself describes a remarkable temple at Pachacamac which was erected by the Yuncas; and the Chimuyans, who were something

farther to the south, appear to have possessed extensive and regular edifices, together with some other attributes of civilization. The inhabitants of Chimù resisted the Incas with great valour, and appear to have been very superior to most of the adjacent tribes, at that early period. Nevertheless, they could not compare with the primitive nation of Collao; and, when we find the remains of the latter mingled, as it were, among those of the barbarous hordes on the sea-coast, their presence may be accounted for in the casualties of war or commerce, or by that forced system of colonization which has already been described. Thus Dr. M. concludes, have I followed the researches of Baron Humboldt and Dr. M'Culloch with the more zeal, because so little notice has been taken of the subject by other writers, and especially because we are now able to take one step more in the inquiry, by studying the arts of these people in connection with their cranial remains.

VIII. Dr. Morton closes his inquiry with the announcement, that Mr. Stevenson (*Travels in S. America*, II. 22, 170, 173) has described very interesting remains near the village of Langunilla, in the province of Caxamarca, which he supposes to be anterior to the Inca dominion in Peru. He represents these remains to be those of a town, of which the houses are all built of stone surrounding a rock or hill in a valley. The bottom range of rooms in them has walls of an amazing thickness, containing stones twelve feet long and seven feet high, forming the whole side of a room, with one or more large stones laid across, which serve as a roof. Above these houses, another tier was built in the same manner, on the back of which were the entrances or doorways, and a second row had their backs to the mountain. The roofs of the second tier in front had been covered with stone, and probably formed a promenade; a second tier of rooms thus rested on the roofs of the first, which were on a level with the second front tier. In this manner, one double tier of dwelling-rooms was built above another, to the height of seven tiers. Mr. S. adds, that this series of buildings was capable of containing five thousand families, and he gives his reasons for supposing it to be, not a granary of the Incas, as some travellers have imagined, but the residence of the Lord of Chicama, when he resided in the interior of his territory, before it became subject to the Inca Pachacutec. These ruins, it seems, present no remains of delicate sculpture, although some of the stones are carved in arabesques. The remains of the fortified palace of Paramonga, are said to be similar to those of the Lord of Chicama's baronial residence! We half envy Mr. S. of the pleasure he would experience when supposing the antiquity of this Cyclopien structure, and we felicitate him on the delight he must have enjoyed on perfecting his supposition that an edifice, so grand in design and architecture, was the domicile of a sovereign, and not a granary.

Thus have we furnished a distinct and complete exhibition of Dr. Morton's inquiry, under all its discursiveness; and, having weighed his facts and reasons with attention and impartiality, we unreservedly coincide with him in affirming these results:—that, at certain specified places in Peru, there are sculptural and architectural remains: that, in a certain desert, there is a Peruvian cemetery containing numerous sepulchral relics of a people whose badly-formed skulls are small, greatly elongated and narrow in their whole length, with a very retreating forehead: that, in the upper provinces of Peru, there are "innumerable tombs" containing the mortal remains of men, the formation of whose crania seems to prove that they are an extinct race of natives: that, in those tombs, a traveller found skulls remarkable for their extreme extent behind the occipital foramen, with the facial bones much elongated, so that the general appearance of their possessors must have been rather that of the ape-family than of human beings: that, although living in the utmost barbarism at the advent of the Incas, yet the Yuncas had erected a remarkable temple: that the Chimuyans appear to have possessed extensive and regular edifices, with some other attributes of civilization: and that, among the tribes whom the Incas found in occupation of the Peruvian territories, the inhabitants of Collao and Chimù might have been as brave as

bull-dogs and as unyielding as the Hurons, without evincing an ordinary degree of intelligence. At the same time, we do not see that the doctor has ventured to determine, or succeeded in adducing evidence to prove, that the people deposited in graves of sand and salt at Atacama, or the ape-like race entombed at Titicaca, could have been endowed by nature with powers capable of designing and erecting the fore-described structural and architectural remains: far less even, has he said or shown that such heads ever devised or directed the construction of the works whose ruins are so interestingly depicted on his pages, as to fascinate the attention of artists and antiquaries. On the belief that the typical skull is quite natural and free from artificial distortion, we conclude, that such a people never did or could produce such works: that the excavations, structures, monuments and sculptures were the workmanship of a race anterior to that which preceded the Incas: and that the men, whose corpses now moulder in the tombs of Titicaca, profaned the fabric of a nobler race by appropriating them for sepulchres.

We abstain purposely from discussing the professor's inquiry as a dialectical or archaeological theme, solely because we feel that such would be a misplaced or unfit subject for the Medico-chirurgical Journal. We may just observe however, that he might have described the form of head given to the various human figures and the stone-idols, the fashion of their long vestments, and the kind of architecture adopted in the gateways and porches, the gigantic pyramid and grand monuments resembling Cyclopien remains. But passing this defect of information, we undertake to show physiologically, that such people, *naturally* having small narrow heads, with two-thirds of the brain deposited behind the occipital foramen, are utterly incapable of producing works not unworthy of the arts of ancient Greece or Rome, for grandeur of design and architecture.

Physiologists universally consider the brain as the organ of the mind; and, on broad intelligible grounds, the most of them hold the beautiful and consistent doctrine—that particular distinguishable parts of the brain are the organs of particular distinct faculties of the mind: daily "experience proves that the mind manifests a plurality of faculties by a plurality of organs." Moreover, it is a fundamental physiological doctrine—that, while every organ performs exclusively one proper function, the power of every function, vital or mental, is naturally and principally commensurate with the size of its organ: in other words, that organic size contributes chiefly to functional energy. Hence, this rule being certain, it is most probable that the small skulls, with their tiny brains, in the ancient Peruvian heads, could never have perceived beauty in fine statuary or grandeur in exquisite architecture. There is this other physiological doctrine generally admitted, that the frontal portion of the brain is the seat of the intellect—composes the higher organs of the intellectual faculties. Hence again, it is most probable that the low, narrow, rapidly retreating forehead in this people never could conceive any work in architecture or sculpture, grand in design and magnificent in execution.

This principle of the physiologists seems to pervade universal nature, as an elementary law; and, as it has an intimate connexion with the subject of this article, we would introduce some brief notes in evidence of its applications to the Human Head, and the effects of its size on the degrees of mental vigour.

First.—When the head is below a certain size, the person always proves imbecile or idiotic; and this fact holds good in all the existing races of mankind. Thus, for instance, in the lowest class of idiots, where the intellectual manifestations are null, the horizontal circumference, taken a little higher than the orbits, varies from eleven to thirteen inches; while the distance from the root of the nose backwards, over the top of the head to the occipital spine is only between eight and nine inches: this fact is absolute and will bear the test of actual experiment. If therefore, extreme defect of size in the head or brain be invariably accompanied by mental imbecility, it is fair to infer that size will in-

fluence the power of mental manifestation, through all other gradations of magnitude—always assuming other conditions to be equal.

Second.—As we have seen in Dr. Morton's introductory essay, the ancient Egyptians formed a remarkable variety of the Nilotic family, having the forehead narrower and less elevated than it is in the proper Caucasian head: now, the fact is worthy of attention, that the same dimensions of the anterior cerebral lobe that prevailed in this primitive people, continue to be discernible in nations who, like them, construct great works of art.

Third.—The busts and statues of the Greeks and Romans show, that eminent intellectual power was concomitant in them with large anterior cerebral lobes, as a national character.

Fourth.—The works of illustrious Painters evince their conviction of the existence of this natural law. For, in their composition-pieces, they constantly exhibit heads possessing a splendid moral and intellectual endowment conjoined with a magnificent development of height and breadth in the middle and anterior cerebral lobes. It is thus that the head of Jesus the All-perfect One is figured in the best pictorial representations of the Redeemer. Had the artists painted Him with a head like the Ancient Peruvians, every European, every enlightened mind, would have turned from the pictures with disgust.

Fifth.—It is matter of direct observation and fact—that, in the existing races, European and American, the large anterior cerebral lobe is always co-existent with powerful intellectuality, and smallness of the same lobe is as constantly associated with intellectual imbecility.

Sixth.—From these and other facts, we derive authority for this induction, as the principle of a natural law—that the *Size* of all organs determines the first measure of their *Power* in action: but, when practically applying this principle in the Comparison of Size, the scholastic rule—*Ceteris Paribus*, ALL OTHER CONDITIONS BEING EQUAL—must never be overlooked; for, otherwise, the comparison will be inaccurate, and may prove the cause of pain, the support of injustice or the source of error. Again, as every upright and considerate observer must discern, the influences of organic size in affecting the degrees of functional power are manifestly susceptible of modification—by age, health, temperament or constitution, excitement, exercise and education, which increase the aptitude and activity of functional action. Further and finally, according to this Law of Nature, the ancient Peruvians with their heads natural, as figured by Dr. Morton in his typical skull, could not have been, by any possibility, the constructors of the works impliedly ascribed to them; but, if they really did design and rear these works, and had heads depressed and denaturalized by mechanical appliances—as we can discover much reason to suspect it was—then had this people their heads converted into monstrosities, and consequently perverted into objects not amenable to this or any other law for directing the judgment of Nature.

From Dr. Morton's sketches of the Inca-Peruvians, we are furnished with a perspicuous, though compendious, view of their traditional origin, their establishment in the territories of their predecessors, their warlike and peaceful achievements, their mode of moulding the head into artificial forms, their funeral rites, manners, laws and religion. He figures eight skulls of this nation, chiefly from the cemetery at Pachacamac, or temple of the sun; and at p. 132-3, he gives the result of the measurement of twenty-three adult skulls of the pure Inca race. According to this result, the *largest* of these crania, gives an internal capacity of 89.5 cubic inches, which is a fraction short of the Caucasian mean; while the smallest head measures but 60 cubic inches: the mean of the whole series gives but 73 cubic inches, which is probably lower than that of any other people now existing. The anterior chamber gives a mean measure of 32 cubic inches—the highest being 36.5, the smallest 23 cubic inches: the posterior chamber gives a mean of 42 cubic inches—the highest being 55.5, the

smallest 30 cubic inches : the Coronal region gives 12 cubic inches as a mean—the highest being 20.5, the smallest 9.25 cubic inches : and the mean Facial angle is 75° —the largest being 80° , the smallest 72° degrees. Hence, therefore, the internal capacity of the skull, in the demi-civilized Peruvians, is much less than that of the barbarous nations : it indicates a larger share of intellectuality, by its relative proportions. It is remarkable however, that the doctor found the heads of nine Peruvian children to be as large as those of children of other nations, at the same age ; though no specimen among the entire series of thirty-five adult skulls reaches the European average of ninety cubic inches of internal capacity.

Among the forest-solitudes at the sources of the Orinoco, the Baron Humboldt discovered the cavern-sepulchre of the Atures, an extinct but once powerful tribe. Dr. M. describes this remarkable cemetery in the words of its distinguished discoverer : he figures one skull taken from the remains deposited in this cavern ; and, according to this representation, the head is more elongated, and less flattened in the occipital region, than is usual in the American race ; but the forehead is retreating, the face large, the jaw ponderous and the cheek-bones prominent, as is common to that people. The Aturian is remembered as a numerous and warlike nation, speaking a peculiar language.

Next in order, we come to a cranium of the Puelchés a Patagonian tribe ; and, in the plate, we recognize the indications of a formidable savage, in the fulness of development above the opening of the ears, the low forehead, the flattened occiput, the arching of the zygoma, the projecting upper jaw and the broad face. The Puelchés are proverbially brave and skillful in war, as their protracted bloody contests with the Spaniards bear testimony.

On the figured skull of a Charrua, we observe a very broad head, with its retreating forehead and flattened occipital region—a cranium exhibiting the characteristics of the American Indian in very strong relief. The Charruas of Brazil hold the head erect, with a bold physiognomy and fierce countenance, indicative of their haughtiness, ferocity and indomitable spirit : they are cruel, revengeful and exterminating in their wars : all their energies, mental and physical, are devoted to martial pursuits : they have no religion, no laws, no rewards, no punishments, no gradations of rank. Equally horrid is the large ponderous skull of a Brazilian Botocudo approaching, in general aspect, much nearer to that of the Orang-Outang than any other skull from a barbarous nation. From this figure, the mental characters of the breed may be readily ascertained : but, on the Professor's page, they do not appear, for want of information concerning the habits of this people, and their history.

We have an excellent Sketch of the Mexican history and characteristics, p. 141 152, illustrated by eight engravings of skulls, and four wood-cuts representing heads enormously elevated by means of artificial compression from back to front, with high broad foreheads, oval faces, prominent cheek-bones, and tumid lips. The Professor considers the skull figured on his sixteenth plate as a relic of the genuine Toltec stock : it was exhumed from an ancient cemetery near Mexico ; and, from its having been accompanied by numerous antique vessels, weapons, and other remains, he assigns it to a person of distinction. This cranium has large and massive developments ; with a full, broad but retreating forehead, and great width between the parietal bones. The head is more oval and elongated than is common in this race, and there is a remarkable fulness in the phrenological region of constructiveness. In accordance with these indications, the Mexicans are known to have excelled the neighbouring nations in architecture, astronomy, arithmetic and metallurgy. They had an established religion, but it was superstitious, idolatrous, and sanguinary : they practised agriculture, and were versant both with the useful and ornamental arts : they had literature, hieroglyphics and a history.

Dr. Morton believes that the Natchez were a branch of the great Toltecans

family. They worshiped the sun by keeping an eternal fire; they practised human sacrifices on the death of eminent persons; and they had hereditary distinctions and fixed institutions. They were more pacific than most of the American tribes: they rarely made wars: they placed not their glory in destroying their fellow-creatures: but when once excited to revenge by repeated provocations, their resentment was appeased only by the extermination of their enemies. About a century ago, they were overpowered and massacred or enslaved by the French, and the Natchez as a nation became extinct. This people was addicted to the practice of human sacrifices to a most frightful extent: sometimes more than a hundred victims were immolated at the funeral of a Great Sun or sovereign chief. Among other singular customs of the Natchez, was that of distorting the head by compression so as to raise it to an incredible height: the process is described by Dr. Morton, and he exhibits two figures—a profile and front view of one of these most singular monstrosities.

One skull of the Chetimaches is figured by Dr. M. and it represents a remarkably massive development: the nearly vertical occiput, the great height of the cranium, and the size and strength of the bones of the face, are not surpassed, he says, by any Indian skull he had ever seen. This nation was powerful and warlike but not numerous: it has disappeared for the last hundred years.

There is an historical sketch of the Seminoles or wanderers, at p. 164 of Dr. M's. descriptions, and he figures four skulls in illustration of the national head. This is said to be a remarkably tall, well-shaped, and very hardy race; the men are affectionate to their wives and children, hospitable to strangers, and not deficient in justice, gratitude and understanding. Nevertheless, they are characterized as proud and arrogant, valiant in battle; ambitious of conquest, restless and perpetually exercising their arms; yet magnanimous and merciful to a vanquished enemy, when he submits, and seeks their protection and friendship. In the Seminoles, the head is large, with a lofty though retreating forehead, great breadth between the parietal bones, and remarkable altitude of the whole cranium. The average internal capacity of the Seminole skulls is unusually large, being 87.5 cubic inches, which is a near approach to that of the Caucasian race.

The Cherokees are a very tall, large, robust race of men; grave and circumspect in their deportment; slow and reserved in their conversation. The arts of peace are more congenial to their disposition than those of war: they are docile, intelligent and capable of instruction, they possess a written language, and many of them have become agriculturists. Dr. M's. plate represents the skull of a Cherokee warrior; but there is nothing particular in its conformation: its internal capacity is 82. cubic inches.

We may group the skulls figured on Plates xxvii—xxxiv: they exhibit the crania of an Uchee, a Chippeway, a Menominee, a Miami, an Ottigamie, a Potowatomie, a Naumkeag, and a Lenapé or Delaware—tribes in whom the true Indian head prevails, and the Indian disposition is perfectly displayed. Another group, and the next in order, is that of the Iroquois or Mingoes, possessing the strongest traits of skull and character for which an American savage has ever been distinguished. It comprises crania of the Cayuga, Oneida, Huron, Pawnee, Dakota or Sioux, Osage and Cotonay or Blackfoot tribes.

There are several nations of Indians located on the Columbia river, and they have been denominated the Flat-Heads, from their abominable practice of producing, by mechanical contrivances, a depression of the forehead and the consequent elongation of the whole head, until the top of the cranium becomes a nearly horizontal plane, in extreme cases. We have a good description and figure, at Dr. M's. p. 203-4, by which this strange process is accomplished. This family of Flat-Heads consists of the Chinouks, Klastonis, Killemoaks, Clatsaks, Kalapooyahs, Clickitats and Cowalitats: with good figures of the others: two of the Chinouk and two of the Cowalitat skulls are exhibited by

Dr. M. in all their grotesque and frightful deformity : by this we are told, the absolute internal capacity of the skull is not diminished, and the intellectual faculties suffer nothing : and why should they ? Their organs are not lessened ; they are merely pushed into an unnatural shape by displacement. Altogether, the head is large in this group, and the skull capacious. These Flat-Heads are inquisitive and loquacious ; not deficient in acuteness of understanding ; they have retentive memories ; and, though fond of feasts and generally cheerful, they are never gay : they are cunning and cautious, mild and inoffensive, and disposed to friendship ; in traffic, they are keen and intelligent, and employ much dexterity in chaffering.

Under a section headed "Skulls from the Tumuli or mounds," Dr. Morton takes occasion to inquire into the geographical distribution of these mounds, their uses, and the race of people by whom they were constructed. His chief step in this inquiry consists in an examination of a series of thirteen skulls, obtained in localities remote from each other, but perfectly authenticated by the places and circumstances in which they were procured. This is the list—one from Circleville, in *Ohio* ; one from the upper Mississippi ; one from the Grave Creek, *Virginia* ; one from the Alabama river ; one from Tennessee ; one from Santa, in *Peru* ; two from the valley of Rimac, in *Peru* ; three from Otumba, in *Mexico* ; one from Golconda, in *Illinois* ; and one from Steubenville, in *Ohio*. Of this series, the first twelve have the low forehead, high cheek-bones, small facial angle, massive lower jaw, prominent vertex, flat occiput, and rounded head of the American Race : with reference, therefore, to these physical characters and to the geographical distribution of the skulls, Dr. M. considers them as remains of the Toltec family, and he thinks it probable that all the tribes which erected mounds as a national usage, were branches of the great Toltec stock. The cranium from Steubenville is set down as having certainly belonged to an individual of the Muskogeans, or other barbarous tribe.

Two representations of the skulls of Chariba, from Venezuela and St. Vincent, occupy the professor's sixty-fourth and sixty-fifth plates. In this people, the head is naturally rounded, but many of the Charib nations practise the flattening process, in such a manner as to depress the frontal bone, and thus to elongate the skull from front to back : the disfigurement thus produced is manifest in the first of these drawings ; in the second, it is excessive. This miserable custom becomes yearly less prevalent ; and thus, by opportunities not distant, the physiologist will be enabled to contemplate the Charibbean head under its natural configuration. The Charibs were the most ferocious and brutal of the American nations : they were without laws and almost devoid of religious observances : they conducted all their enterprizes with extraordinary craftiness : they were suspicious and revengeful, morose and melancholy : their cannibalism was execrable : they looked upon all other men as mere beasts fit only to be slain and devoured.

On the plates LXVI. LXVII. and LXVIII. we find three figures of the Arancanian skulls : the two first exhibit a side and front view of the cranium of Bampuni, a chief who was slain in battle, in 1835 ; the last is from the head of Chilicoi, another chief who fell in the same encounter. Bampuni's skull is symmetrical, with the frontal bone lofty but narrow : the whole posterior cranium is full, and the internal capacity not much short of the Caucasian mean. We are struck with the projecting face of Chilicoi and the consequent small facial angle ; with the lowness of his forehead, his flattened vertex, and the smallness of his whole head. Dr. Morton's collection contains three Arancanian skulls, and he finds their mean internal capacity to be 79 cubic inches, with an average facial angle barely seventy-five degrees. Hence, the national head is larger than the Peruvian, and somewhat less than the mean of the collective American race. The Arancanians are a robust and muscular people, endowed with extraordinary bodily activity, brave, discreet, cunning to a proverb,

patient in fatigue, enthusiastic in all their undertakings, chivalrous and fond of war as the only source of distinction. They had invented numbers, and possessed the useful arts before their intercourse with Europeans: they are highly susceptible of mental culture, but despise the restraints of civilization; and those of them, who have been educated in the Spanish colonies, embraced the first opportunity to resume the habits of their nation.

As an additional evidence of the unity of race and species in the American nations, Dr. Morton adduces the singular fact—that, from Patagonia to Canada, from ocean to ocean, in the civilized and uncivilized tribes, a peculiar mode of placing the body in sepulture, has been practised from immemorial time. This peculiarity consists in depositing the corpse in a *sitting posture*, and this is represented most graphically on his sixty-ninth plate, in the figure of a natural mummy. He is aware that this custom is not exclusively American; but the evidences and arguments which support his proposition are abundantly conclusive.

Four genuine skulls of the Esquimaux, or Mongol-Americans, are engraved on the seventieth plate; and, while they show the great and uniform differences between the heads of this people and those of the American Indians, they also serve as a physical (and a mental, as we would add) corroboration of the opinion—that the Esquimaux are the only people possessing Asiatic characteristics on the American continent.

As an Appendix to his *Cranioscopy*, the doctor introduces an Essay intitled “Phrenological Remarks on the relation between the natural talents and dispositions of nations and the development of their brains.” It was contributed, as Dr. M.’s request, by Mr. Combe; and, like all this writer’s compositions, it is distinguished by elegance, conciseness, and perspicuity, by depth of thought, soundness of judgment, generosity of feeling, and acuteness of ratiocination. Dr. Morton has illustrated this sketch with the engraving of a European skull, which is outlined into the three regions of cerebral organs—the animal, moral and intellectual—corresponding and subservient to the three orders of mental faculties. He has also illustrated the “Phrenological Remarks” with a most elaborate and comprehensive “Table of the Phrenological Measurements” of one hundred skulls, showing the dimensions of each head and of the several cerebral organs assigned to co-existing faculties of the mind: but, important as this table is, it would have been greatly more valuable if so many of its subjects had not been denaturalized by the barbarous fashion of disfiguring the head with artificial appliances.

Here, we finish our account of Dr. Morton’s *American Cranioscopy*; and by its extent and copiousness, our article will show how highly we have appreciated his classical production: we have studied his views with attention, and examined his doctrines with fairness; and, with perfect sincerity in rising from a task which has afforded unusual gratification, we rejoice in ranking his “*CRANIA AMERICANA*” in the highest class of transatlantic literature, foreseeing distinctly that the Book will ensure for its author the well-earned meed of a *Caucasian* reputation.

ACUTE HYDROCEPHALUS. By *David D. Davis, M.D. M.R.S.L.*
Taylor and Walton, 1840. 8vo. pp. 309.

DR. DAVIS thus describes the objects he has in view in publishing this work. "The first is to prove, that acute hydrocephalus is an inflammatory disease; and the second, is to establish the fact that it is curable equally, and by the same means with other diseases of inflammation." Of the first part of the book our analysis will be brief—the fact announced in it being, we believe, already well known to the profession: we will dwell rather more fully upon the treatment recommended by the author, not that this is however the novelty he seems to consider it, but, because any recommendations, from a physician in extensive practice, in reference to a disease so often fatal, cannot be too widely or too fully diffused.

I. THE SYMPTOMS AND DIAGNOSIS.

It cannot be necessary that we should minutely detail the symptoms of a malady, so well known and so frequently described, as acute hydrocephalus. The author has presented his readers with a very vivid and faithful picture of the disease, and we will content ourselves with transcribing some of the signs he considers especially pathognomic or diagnostic. He divides the disease into three stages; viz.—the *formative* or premonitory; the stage of *active inflammation*; and, the period of *collapse*.

1. *Formative Stage*.—This, (the stage of turgescence of Golis,) he thinks especially denoted by the following signs;—slight giddiness and confusion upon moving the head; aching pains of the extremities, and at the back of the neck; disturbed sleep; loss of appetite, often attended by vomiting; scanty evacuation by stool and urine—an altered complexion and general appearance—a stumbling gait—irritable and altered temper and disposition—morbid acuteness of the external senses—irregular, but not quick pulse—harsh skin, and loss of strength.

2. *Inflammatory Stage*.—In some subjects the formative stage is very short, and the inflammatory stage is at once developed, with great fever and convulsion; and this is especially the case in vigorous children. Generally, however, the second stage approaches gradually, after the expiration of several days. The head then becomes very painful and very hot; a distressing sense of pressure over the eyes is present, while they are more and more sensible to light: the countenance becomes yet more altered and the complexion pale; the vomitings are frequent, especially when the body is moved, and a characteristic savor of the breath is present. A dull pain in the region of the stomach and liver, great subsidence of the abdomen, obstinate constipation, rapid emaciation with accompanying debility, are often prominent symptoms; while, with these, the pulse is slow, intermitting or irregular, and the skin more and more flaccid: the little patient frequently carries its hand to the seat of pain.

3. *Stage of Collapse*.—Of this Dr. Davis considers the following among the most prominent symptoms: a marked dullness of the hitherto preternaturally excited senses; an oblique position in bed; involuntary movements of the extremities, and general restlessness; picking of the ears, mouth and nostrils, the hands being however directed in a trembling and uncertain manner; disordered vision and a convulsive movement of the eye-lids; the urine scanty, deep coloured and furnishing a white heavy sediment—the pulse weak and soft, but still irregular—much sighing—very offensive breath—sudden and loud screaming, and grinding of the teeth. After these symptoms have continued from four

to seven days an illusory calm often occurs, during which, the patient temporarily recovers his senses and natural disposition. This, after probably exciting the hopes of the parents, and of the attendant if inexperienced, soon passes away, and the child gradually sinks. The fatal termination is often accompanied by hectic fever, convulsions, loss of vision, or palsy.

In reference to *diagnosis*, the author is not sufficiently minute; he contents himself with an accurate abstract of the principal symptoms, and says, that by comparing these with the symptoms of other febrile diseases, the distinctions between them will be easily found. This is all very well in books, wherein we distinguish diseases from each other with great facility; but, at the bed-side, we feel too often the difficulty of the matter, and would be glad enough to avail ourselves of the numerous hints large practical experience ought to furnish us with. There are few practitioners but have been embarrassed some time or another, in distinguishing between hydrocephalus and infantile remittent fever. Again, we are surprised that Dr. Davis, whose practice lies so much among young children, should have passed over, in utter silence, the cases adverted to by Abercrombie, Gooch and Marshall Hall, and termed by the latter hydrancephaloid disease: cases, which arising from opposite causes, and requiring entirely opposite treatment, yet often bear a wonderful resemblance to true hydrocephalus.

II. PREDISPOSING CAUSES.

This is a good chapter. Of all the predisposing causes, Dr. Davis thinks *difficult dentition* to be the most frequent. During this process, the vascular tissues of the brain become overcharged, and more or less drowsiness prevails: this is often followed by pain and heat of the head, and a marked change in the disposition of the child; its eye grows dull, and its appetite is diminished. If the infant be not relieved, by the judicious interference of the medical man, hydrocephalus will probably follow; for, in nine out of ten cases of the disease, occurring in children during the first three years of life, it originates in this manner.

The practice of feeding infants upon *spoon diet*, is also a powerfully predisposing cause of diseases of the head. The child will often, on account of the palatable manner in which it is prepared, take this description of food with avidity, and may even seem to thrive upon it very well for a while; but at no very distant time, a week or two, or a month or two, symptoms of deranged digestion manifest themselves, and various organs, but especially the brain, may become affected. The partially nourished system of the child, cannot bear up against the disorders induced by dentition, and it falls a victim to hydrocephalus, or some other disease, against which, under a more natural mode of nurture, it might have successfully struggled. Nor does the mischief stop here, for, as the author truly observes, even supposing that the child escapes all the mischances of infancy, yet is its constitution, long after, and perhaps permanently, enfeebled, and it is always much more liable than the robust to the supervention of various congestive and inflammatory affections.

Dr. Davis especially deprecates the attempts, often made by many mothers, to bring up their children upon *arrow-root*, which they think supplies a nourishment equal to their own milk. Allowing it as an auxiliary to the mother's milk, during the first few weeks, he insists upon the impropriety of attempting to nourish a child entirely upon it, affording, as it does, such an inefficient degree of support.

Among other predisposing causes may be enumerated; certain peculiarities of temperament, and physical conditions of the brain, and the exanthematous and gastric fevers of infancy. An obstructed or inflammatory condition of the viscera of the cavities of the abdomen and chest predispose in like manner:

"First, by producing and sustaining an excess of vascular determination to the brain;—secondly, by exciting sympathetically a morbid action in the vascular tissues of the brain;—and, thirdly, by what I may be permitted to call a critical metastasis of the diseased actions of organs within the chest and abdomen to the vascular tissues of the encephalon."

Again, other causes are found, in long-continued disorders of the bowels, the abuse of opiates, the early use of stimulating food, and the excessive occupation of the mind, in which many children are engaged at schools. Diseases badly cured, or suffered to become chronic, and low inflammatory affections, occurring in the cachectic habit of body, often lay the foundation for hydrocephalus. Golis has observed the curious fact, that strong emotions on the part of the mother, when far advanced in pregnancy, predisposes the infant to disease of the brain; most of the children, who were born soon after the bombardment of Vienna in 1809, died convulsed in 10, 20, or 30 days—their brains exhibiting marks of inflammation, and the ventricles containing fluid.

III. EXCITING CAUSES.

Among these may be mentioned, concussion of the brain by violent movements of the body, as in rude sports, jolts of cradles, carriages, blows of the head, &c.; the too rapid suppression of discharges and cutaneous diseases; inflammations of the face, ears, mouth, &c.; want of cleanliness of the scalp; metastases of eruptive fevers. Dr. Davis believes, with the German writers, that many cases of hydrocephalus originate in *colds*, caught during the first few days after birth, which are also the causes of many cases of convulsions so frequent at that period of life. In reference to the assertion, of the occurrence of hydrocephalus as a consequence of vomiting, Dr. Davis thinks it unfounded; for, although he is much in the habit of employing emetics in acute diseases, he has never observed any such consequence to follow their use. The opinion, that suddenly suppressed diarrhoea often leads to the disease, he considers as well-founded, having met with several cases so originating. So, also, he has met with several examples of what Golis calls the tumultuous form of the disease, attributable to "bad management, and consequent sudden suppressions or retrocessions of the peccant fluids, incident to sundry discharges from large ulcers and extensive skin diseases."

IV. PROXIMATE CAUSE.

Very nearly half the work is occupied in discussing this point. We think the author has been most needlessly and injudiciously prolix: the fact, that hydrocephalus is itself a mere effect, and arises from a prior inflammatory state of the brain and its membranes, has now been often ably demonstrated, and is generally admitted; but supposing, for a moment, that the fact were less generally known than we believe it to be—we then think the author's time injudiciously employed in entering upon long criticisms of the erroneous ideas of Carmichael Smyth, and the imperfectly developed ones of Dr. Quin, not to mention a dissertation upon a case published in Venice in 1621. It would have been more to the purpose to have cited the opinions and experience of Drs. Clarke and Abercrombie, (both of whom treat of the disease as purely an inflammatory affection of the brain,) and some of the French writers. Strange to say, the names of no one of these authors is alluded to, and Dr. Davis appears to think, the demonstrating this view of the nature of the disease has never been efficiently performed by any one but Golis, and, that it even yet remains a disputed point. Any doubt which may remain, the author endeavours to dissipate, not by any original dissections, but by republishing a great number of the obser-

vations and dissections made by Golis, (whose work is well known in England through the medium of Dr. Gooch's translation) and some dissections by Dr. Cheyne. However this deficiency on his part is, we will admit, explained upon grounds truly satisfactory. "I have no inclination to multiply evidence in favour of the inflammatory origin of hydrocephalus, founded on results of cases which have from time to time occurred in my own practice, inasmuch as the majority of such opportunities are become simply matters of recollection to me, the post-mortem examinations of the last nine or ten years within my experience having been few and far between; the great majority of cases having yielded to the treatment adopted." 165.

V. TREATMENT.

The treatment Dr. Davis has found so successful consists in free bleeding, the use of emetics, and the efficient application of cold.

1. *Bloodletting*.—The author complains, that great prejudice exists against the effectual employment of this means. "It accords with our universal experience, that whenever it becomes our duty to recommend the abstraction of blood from infants or very young children in a way to ensure the efficiency of the operation, the proposition is sure to be received with coolness in the first instance, if not eventually with repulsion or positive non-compliance." 229.

The best time for bleeding is the earliest possible period, after the nature of the disease has been positively decided upon. The inflammatory stage being preceded, often for some days, by premonitory symptoms, a question arises, whether the operation should be had recourse to during their existence, before the malady can be said to be fully established. Here is Dr. Davis' opinion:—

"I would answer, that during the pyrexia attendant upon the accession of an active fever, although its peculiar character might not be yet established, it could never be improper, but on the other hand a positive advantage, to have recourse to an abstraction of blood, upon a competent scale, to effect a subduction of the pyrexial actions of the arterial system. . . . All that could be required to justify the decision of advising the abstraction of blood under the supposed circumstances, would be a state of pyrexia as already assumed; and whether it might prove in the further progress of its development a case of small-pox, measles, acute hydrocephalus, or of any other fever whatever, the operation of a timely abstraction of blood would be a measure of unquestionable advantage in the calculation of its proving a disease of any pyrexial importance." 238.

This we think is going too far. When the case has arrived at the inflammatory stage, there can be no doubt of the necessity of free and immediate bleeding. As to the *quantity* to be abstracted, we again quote the author's words:

"I know but of one useful, safe, and satisfactory test; and that I beg to propose to the consideration of my reader, as the result of an anxious, cautious, and most extensive experience, during a period at least of about ten years. It is to carry the first bleeding, provided the opportunity is given to prescribe it at the onset of the disease, to full fainting. It is not a state of faintishness that is wanted; it is full and decided fainting. It is that state of enfeebled and reduced circulation, which, together with an occasional suspension of consciousness, is called *deliquium animi*. It is accompanied by an absence of all colour in the lips, and also in a great measure by a corresponding change of complexion of the whole countenance. The entire surface of the body, and especially of the forehead is suffused, during this condition of the circulation, with an excessive abundance of cold moisture." 241.

Dr. Davis' rule being to bleed until complete fainting occurs, the quantity

taken is not of so much consequence : but, we subjoin his statement of the extent to which children may usually be bled, before fainting is produced :

A child between one month and one year.....	3 to 5 oz.
A child of two years	5½ to 6 oz.
— between three years and five years	6 to 10 oz.
— between six and ten years	10 to 18 oz.

At five years old and upwards, the blood may be taken, as usual, from the arm, but, at an earlier age, it is more conveniently abstracted by cupping-glasses, or by opening the jugular vein. If the bleeding be employed fully and promptly, it will seldom be necessary to repeat it ; and it is far better and safer to attack the disease thus vigorously at first, than to employ smaller and successive bleedings. Much must depend upon the stage and degree of development of the disease. A greater loss of blood is usually required, in proportion to the degree of heat of the head. Although it is sometimes necessary to repeat the operation, this has rarely to be done more than once.

Of all *modes* of bleeding children, Dr. Davis thinks the application of the *cupping-glasses*, behind the ears, the best ; but, as it requires considerable dexterity for its performance, it may often happen that a sufficiently adroit operator is not at hand. He suggests, that in towns and districts, where professed cuppers do not reside, the practitioners should select one of themselves, to whom all the cupping of the locality should be transferred by the rest. Where cupping cannot be performed, he recommends opening the *jugular vein*, but he is here again met with a difficulty. "In general practice I have found the younger part of our profession somewhat indisposed to perform this very simple operation. This indisposition has no doubt arisen from not having been taught to practise it under the eye and with the assistance of their senior and superior, during their apprenticeship." As a last resource only he would employ *leeches* : he thinks this a wretched mode of abstracting blood, as, from the slowness of the operation, a sufficient quantity of blood cannot be abstracted, in a moderately short time ; and thus the general arterial action, upon which the continuance of the disease depends, cannot be subdued. This he considers explains the anomaly with regard to the practice of Golis, who, notwithstanding the correct view he took of the pathology of the disease, lost a very large proportion of his cases : had he employed cupping, in the place of leeches, the result might have been very different.

2. *Emetics*.—Dr. Davis places great reliance upon these. "Having secured as much control over the morbid arterial excitement of an incipient case of acute hydrocephalus as one sufficient abstraction of blood can be expected to give, the first important measure to be adopted immediately afterwards, with the view of maintaining, or even of extending our control over the action of the heart and arteries, should be to exhibit to the little patient, as soon as possible after his recovery from the fainting consequent upon the loss of blood, an active emetic. For a child of six months old, the proper dose should be a fourth or a fifth of a grain of tartarized antimony and about five grains of powdered ipecacuanha. This form and quality of an emetic will rarely disappoint the expectations of the practitioner ; whereas the pleasant draughts and mixtures made with the diluted wines of tartarized antimony and ipecacuanha, usually prescribed as emetics for young children, are occasionally chargeable with that result." 257.

This emetic will probably induce great vomiting and may even harass the patient for several hours ; but then there is all the more probability, that the general arterial action will continue subdued. To ensure its action, fluids should, if necessary, be forced upon the child, but it will usually take the breast readily. Dr. Davis prefers the full action of an emetic, even should it be necessary to repeat it in a few hours, to inducing the horrible suffering attendant upon mere nausea.

3. *Cold to the Head.*—To enable us to examine the head properly, and to apply the requisite means, all the hair should be closely shaved off. The speedy reduction of its exalted temperature is of high importance. Sometimes the heat is greatest at the occiput, sometimes at other parts, usually at the forehead. We may at once ascertain its degree and situation, by applying both our hands for a few seconds to opposite parts of the head. The best means of reducing the heat is by the use of *Mackintosh's Water-cushion*.

"The mode of using this very convenient implement is to charge a cushion of this description to the extent of its entire capacity with the intended fluid, and immediately to allow one half of the whole fluid contained in the cushion to escape; and then suddenly to stop and secure the valve so as perfectly to prevent the escape of any more of the cold fluid, and at the same time to bar all intrusion of atmospheric air. The cushion will then contain half its capacity of an intensely cold fluid, and no air. The little patient's head is to be laid with its occiput and nape of the neck to repose on the middle of the cushion; which will have the effect of rapidly reducing the excessive heat of the head." p. 266.

The fluid will require changing within the half-hour. As long as the heat of the head continues, the child testifies great pleasure on the re-application of the cold; and when, from a diminution of the temperature having taken place, it manifests alarm at the renewal, it should be suspended or discontinued.

4. *Blisters.*—These, Dr. Davis considers as of very little utility, and, justly observes, that they will prove positively hurtful, when applied prior to the use of depletion. He prefers large ones which cover a considerable space of the parietal region on both sides; thus leaving the forehead free for the application of evaporating lotions, and the occiput at liberty to repose on the cushion.

5. *Mercury.*—"Mercury, it is well known, is a medicine of no little importance in the treatment of inflammatory diseases. As a remedy for acute hydrocephalus it has been recommended as a cholagogue, a purgative, and as a power capable of repressing inflammatory action. As a *purgative*, I am in the habit of recommending a combination of two or three grains of calomel, and sometimes twice that quantity, with six, eight, or twelve grains of jalap, according to the age of the patient, as soon as the sickness shall have ceased after the operation of the emetic. To prevent uneasiness from griping I seldom omit adding a few grains of ginger. In cases of known obstinate constipation I have sometimes considered it useful to add a quarter or half a drop, or even more, when authorized by the age of the patient, of croton oil." p. 271.

When using it as a *cholagogue*, in the suspended and disordered states of the functions of the liver, which so often precede or accompany hydrocephalus, Dr. Davis recommends from one to three grains of calomel, to be given uncombined every three hours.

In regard to producing the *sialogogue* effects of mercury, the author thus expresses himself, after adverting to the bad effects, which sometimes result from too free salivation, and the necessity of caution in the administration of the larger doses of this mineral.

"The few cases of recovery from acute hydrocephalus which we find recorded as having taken place in the absence of early bleeding, are, I think, principally, if not exclusively, to be attributed to this constitutional action of calomel as a resolvent of inflammatory action. But this power is rarely exerted to the extent of saving life. I never, myself, depend upon it; and, indeed, I seldom use it at all, excepting as an auxiliary to the lancet, or as an almost hopeless substitute for its use, when considered too late to have recourse to adequate repeated abstractions of blood with any considerable hopes of a successful issue." p. 275.

Dr. Davis concludes his work by recapitulating the principal premonitory

symptoms of hydrocephalus, on the appearance of which parents should lose no time in applying for medical aid. He also presents us with abstracts of twelve cases, which terminated fatally, for want of timely or appropriate treatment; and the details of six others, which have been very recently successfully treated, at the University College Hospital.

The author repeatedly characterises his book as "this little volume," "this little work": we think 300 pages octavo ample room for treating the subject of acute hydrocephalus, and that the work even might have been reduced in size with advantage. The first part, demonstrating the pathology of hydrocephalus, is quite uncalled for, as adding nothing to what is well known upon the subject. The latter portion we receive thankfully. Not that the doctrines advocated in it are by any means new, as Dr. Clarke, more than twenty years ago advocated cupping to faintness and opening the jugular vein, while Dr. Maxwell of Dumfries, as quoted by Dr. Joy, in the *Cyclopædia of Practical medicine*, cured sixty out of ninety patients by bleeding from the jugular vein until fainting supervened. Still, it is encouraging to find a physician of Dr. Davis's experience, speaking so confidently of the frequent curability of a disease so terrible as hydrocephalus; and we do not doubt, that the publication of his opinion will be the means of exciting renewed attention to the question of early and free depletion. It must not however be forgotten, that the system of indiscriminate bleeding in head affections, which, for a while, followed the publication of Dr. Clarke's work on *Diseases of Children*, has in our own day found few admirers. The reducing a child to a state of perfect syncope, when merely general febrile action is present, should not be rashly undertaken, and when put into operation before decided symptoms develop themselves, will often have been unnecessary. Doubtless many cases so treated and recovering would never have turned out to be cases of hydrocephalus at all. These cautions are the more necessary, as, although the author forcibly shews the good effects which may result from extensive bleeding, he never, in the remotest manner, hints at the possibility of over-depletion occurring, nor does he indicate those obscure and difficult cases of head-disease, in which depletion of any kind would be injurious or even destructive.

A PRACTICAL WORK ON THE DISEASES OF THE EYE, AND THEIR TREATMENT, MEDICALLY, TOPICALLY, AND BY OPERATION.
By *Frederick Tyrrell*, Senior Surgeon to the Royal London Ophthalmic Hospital, Surgeon to St. Thomas's Hospital, Professor of Anatomy and Surgery at the Royal College of Surgeons in London, &c. London: John Churchill. 2 Vols. 8vo. 1840.

MR. TYRRELL's opportunities of observation at the London Ophthalmic Hospital have necessarily been great, and no less great than valuable. The work before us affords sufficient evidence that he has not neglected them.

There are two sorts of works on the science of medicine—the one offers the results of the experience of the author, with little parade of learning and no critical examination, at least no elaborate criticism of the views of others—the second kind of work is stuffed with references, swollen with quotations, and mottled with the various notions of various men. Both works are useful, both necessary, and either would be incomplete without the other. But if the first

kind of book is well executed, and if the experience it conveys has been considerable, we cannot be surprised at the preference which practical men are apt to shew towards it.

Every body is aware that there is a class of bookworms who affect to look down upon those practical men. We know not what right they have to do so. A commentator and a man of indices is constructed without difficulty. Plodding industry, with a very moderate amount of sense, are the raw materials, and even the manufactured article is made of little more. But practical talent in any art, and more especially in one like medicine, a calculation as it is, of chances, implies some mental requisites, we might almost say accomplishments, that none but fools despise. Quickness of perception, rapidity of inference, and no trifling decision, are the natural gifts on which must be grafted the acquired knowledge of the art. Those who think lightly of practical talent have it not, or are jealous and insincere in their contempt of it.

Let us not be understood to sneer at learning. Those who *know* us will not tax us with that. But to set up a mere acquaintance with other men's opinions over the power of forming one's own, is to give to one species of knowledge a superiority, that, neither in the eye of reason nor of usefulness, it is entitled to.

Mr. Tyrrell's volumes are of the plain matter of fact description that we have alluded to. They convey the experience he has acquired in a simple, intelligible form, with few graces of style, and no effort at learning. The reader will become acquainted with *his* practice, learn *his* opinions, and approve or disapprove as he chooses. The reader will *not* learn the opinions and the practice of every previous writer, and, if he wants this, he must seek for it elsewhere.

Mr. Tyrrell informs us that, in treating of affections of the eye, he has endeavoured, for the most part, to state the most prominent and least variable symptoms; such as are, in fact, most characteristic of each particular disease; he has purposely avoided entering into a detail of the more minute and more variable signs, which tend so much to confuse in description, and which, really, are of little value in practice.

Perhaps the work before us wears too much of the garb of the lecture-room, and displays somewhat a magisterial tone in matters that are familiar to all well-informed men. Mr. Tyrrell, for example remarks:—

"The means of obtaining a correct diagnosis, which should determine and guide the plan of treatment, in any particular local disease, should, in my opinion, comprehend, not merely the investigation of the local signs or symptoms; but also include an enquiry into the condition of the system generally, and of the principle and important organs, and their functions; by derangement of which, local disease is so frequently modified and maintained." xxvi.

Which is all very true, but no more true than trite. His observations on plethora and debility partake of the same character—a kind of assumption of ignorance on the part of the auditor, which, though necessary in the wards and in the class-room, is not so becoming in a book addressed to the profession. We pass over all this sort of thing, recommending it, however, to the junior student, on whom Mr. Tyrrell's remarks cannot fail to make an impression, and we proceed to a chapter of *Preliminary Remarks*, which contains many useful hints.

1. *Mode of Examining the Eye.*—There can be no doubt this is often done clumsily enough, and injection, irritation, and additional inflammation of the eye induced by it. In a notice which we gave of Mr. Morgan's book, we quoted his method of examining the eye; and Mr. Tyrrell's is not very dissimilar. Perhaps it would be as well to mention it.

The patient, says Mr. Tyrrell, should not be exposed to too great a body of light; nor to a bright or direct light; but only to such a degree of it, as may be sufficient to afford a correct view of the organ; and the patient should, if possible, be placed, so as to receive the light, obliquely, upon the face. If an

adult, either the reclining or recumbent posture is best—as enabling the medical practitioner to look well beneath the superior palpebra. The patient should be directed to cover one eye with a handkerchief, or with the hand, whilst the other undergoes an examination, which should be conducted in the following manner:—the point of the fore-finger, of one hand, should be placed a little below the centre of the inferior palpebra, about the margin of the orbit; so that by pressing the integument downwards, and, at the same time, backwards, or towards the maxillary bone, sufficient stress can be made on the skin, to cause its depression of the lid, and slight eversion; simultaneously, the extremity of the thumb, of the opposite hand, should be placed near the centre of the superior palpebra, a little above the upper margin of the tarsus, between it and the eye-brow; so that little or no pressure be made upon the globe itself, but so as to enable the examiner to raise the integument of the lid towards the brow, against which he may make firm pressure; and thus, by acting upon the integument, he may raise the palpebra to a sufficient extent, to obtain a satisfactory view of the eye, without any violence to the globe: the finger and thumb of the two hands should act together, to depress the lower, and elevate the upper palpebra at the same time; and during the separation of the lids, the patient should be directed to look downwards, inwards, and outwards, in succession; by which the whole cornea can be brought under observation.

Another plan is required with a child. It should be placed upon its back, across the nurse's knees, with the head projecting on one side, towards the examiner, who should be seated, in a high chair, at the side of the nurse, so that he can receive the child's head between his knees; he can thus command the child's head, whilst the nurse commands the body and arms.

2. *General Treatment.*—Mr. Tyrrell devotes some pages to this. We need not follow him in detail, but merely allude to a point or two.

General Bleeding he looks on as unnecessary and improper, unless the pulse evinces a degree of *resistance or incompressibility*, besides an unusual degree of fulness, or quickness; except when there is cerebral mischief or disease, when the pulse is usually slow and labored. He thinks that, no more blood should be taken than just suffices to relieve the state of tension, or to diminish the force of the circulation.

“In most instances, faintness does not occur when sufficient blood has been taken away, to produce the requisite change in the character of the pulse; and frequently the patient does not experience much immediate relief as regards the local disease; but after a short time, the beneficial influence of the treatment becomes apparent, in a decided mitigation of the severe local symptoms; and the cure can be generally completed in a shorter period, than when the loss of blood has been so great as to cause a state of depression: for, although the effects of bleeding to such an extent, as to occasion prostration of strength, usually produces a more decided and rapid relief of the urgent local symptoms, yet the morbid action which remains, commonly proves obstinate or difficult of cure, in proportion to the extent of the general debility which ensues from abstraction of blood.”

Mr. Tyrrell thinks it a great mistake to suppose that it is requisite to draw blood in large quantities. It will be observed that these opinions clash directly with those of Mr. Lawrence and others of that school. We believe, however, and have long done so, that the moderate practice is the best, and we cannot say that we coincide with those who bleed à la Sangrado in inflammatory eye diseases.

From amidst some observations on the use of mercury we extract the following:—

“Very many surgeons imagine that mercury acts most beneficially whilst the
No. LXVI. I 1

patient is kept upon a very abstemious diet, and that generous living is incompatible with the use of this remedy: I am, however, perfectly satisfied that it acts more certainly and beneficially when a tolerable degree of power is maintained; and that there are very few cases in which mercury cannot be taken, provided that the patient be properly supported during the administration of the remedy: I consider it a general rule, that whenever it is necessary to give mercury for the continuance of a few weeks, that it is essential to promote and maintain power at the same time."

Our readers are aware that this is a point on which we have always insisted. If persons are to take a lengthened course of mercury great hazard is inflicted on them by keeping them low. On consideration, can it be deemed necessary? For protracted courses are not given for affections of an acute inflammatory character, and very chronic complaints are seldom benefitted by what greatly reduces the bodily powers. In primary and secondary syphilis, it is a fatal error to keep a patient very low. If his constitution is naturally weak, that weakness is augmented, perhaps seriously, by the debilitating influence of mercury and a low regimen. But if the disease is acute and of inflammatory character, then, of course, the action of mercury is assisted by antiphlogistic measures. Such a course of mercury, however, is *not* a long one.

3. On the Application of Local Remedies.

a. Fomentations should be of moderate heat (we suppose the best rule is to consult the patient's own feelings and to watch the effect). Mr. T. thinks that the best means of using the fomentation, is by soaking a piece of fine linen or flannel in the heated liquor, and then placing it in contact with the surfaces of the palpebræ, which should be closed as when asleep. Five or six minutes of time are quite sufficient for the continuance of the fomentation at once; and the part should be well dried, when the application is laid aside. Mr. Tyrrell objects to sponge because it may be gritty. It is easy, however, to tell that, and well to use it if it is *not* gritty. Steaming the eye is even preferable to fomenting it. If a large funnel be inverted over a jug containing the heated fluid, the steam which escapes from the narrow end of the tube, can be received against the palpebra, at a distance agreeable to the patient.

Lotions.—"I generally use a lotion cold or tepid, as may be grateful to the sensation of the patient; and, most frequently, find that the tepid preparation is selected. If a small cup or glass, containing a portion of the lotion, be placed in a larger vessel, partly filled with hot water, the lotion acquires the warmth of new milk, (which is sufficient,) in a few seconds. Either warm or cold, the lotion should be applied with a piece of soft linen, to the surfaces of the eyelids, which should be gently closed; when sufficient of the fluid will penetrate the palpebral aperture, to effect the desired purpose: I object to the use of lotions with the conjunctiva exposed, either when they are used by eye-glass, syringe, or other method: I have seen much mischief from their being thus employed. If a case require the free contact of a stimulant or astringent to the conjunctiva, I much prefer the application of a drop or two, through the palpebral opening. I am of opinion, further, that the application of a lotion should not be continued more than one or two minutes at a time, and never kept to the part for hours together, as I know they frequently are: too much moisture, especially with cold, is apt to induce affection of the fibrous structures.

Poultices are objectionable for the same reasons." xlix.

However, we have seen light poultices useful, and we doubt whether medicated lotions act very efficiently *as such*, when merely applied in the shape of wetted linen.

Dry Warmth.—Small square or rounded bags of linen or flannel, about three,

or three and a half inches in diameter, should be filled about two-thirds full with bran, or camomile flowers; and with either of these, some narcotic, camphor, or other matter, as thought proper, can be mixed; when used, they should be put upon a hot plate, or a warming pan, and when sufficiently heated, one should be placed so as to cover the eyelids, brow, &c.; and retained by a gauze handkerchief or ribbon: the application may be continued as long as the patient pleases, (provided the bags be not made very hot,) as it is not likely to produce any mischief. It affords great relief in some cases.

Speaking of *ointments* and *oil*, Mr. T. objects to the latter, when medicated, as more likely to penetrate in quantity, between the palpebræ, to the surface of the eye, than an ointment, and this is not the intention of the application.

Leeches, says Mr. T. should be applied to the outer surfaces of the eyelids, or upon the cheek, a little below the inferior palpebra; they have very little effect in relieving the vessels of the conjunctiva, when placed upon the temple. We are not quite sure of this. We have seen leeches relieve conjunctival inflammation more when placed upon the temple, than when applied to the cheek. It has seemed to us that leeches often act as *derivative* agents rather than as direct emptiers of the inflamed vessels. And if this be the case, it is not necessary that they be applied on the course of those vessels. If a case is at all troublesome, we generally apply leeches below the eye and on the temple. By this means we get both derivation and evacuation of the turgid vessels.

Mr. Tyrrell has been compelled to abandon the application of leeches to the conjunctiva itself, as it more frequently produces mischief than good, by creating irregularity of the surface of the membrane, which gives rise to irritation as an extraneous body would. And for a similar reason scarification of the conjunctiva is not applicable to ordinary cases.

In cases requiring local abstraction of blood, when leeches cannot be procured, or when their use is forbid, the angular vein may sometimes be opened, with much advantage, but only when it is well developed; otherwise, the cupping glass should be applied to the temple, or behind the ear, a little below the mastoid process.

Counter-irritants are best applied behind the ear. Mr. T. recommends as a slight counter-irritant:—

℞. *Liquoris ammoniæ fortiss.* ʒij.
Olei amygdalæ ʒss.
Adipis recentis ʒvss. Misce.

It should be put into a wide-mouthed bottle, and well secured; or the ammonia soon escapes. When employed a small portion should be smeared over the forehead, above the eyebrows, by means of an ivory paper knife; and it should be allowed to remain on, till it produces a smarting or heat; (from half a minute to a minute;) it should then be washed off, by sponge and water. It may be repeated daily.

Mr. T. prefers repeated to open blisters. For children he frequently directs a few cotton threads to be smeared with some of the blistering ointment, and to be placed behind the ear during the night.

Mr. Tyrrell is afraid that when *issues* or *setons* are discontinued, the disorder is apt to return. When he does make an issue it is with beads in the arm.

He recommends, in conclusion, that "in all inflammatory and congestive diseases of the eye, the patient should not be confined to bed, or allowed to be much in the recumbent posture, if at all: for even when in bed, the shoulders and head should be raised and well supported. The relief obtained by position in the acute diseases is very great, and it is, frequently, taken advantage of by the patient, when neglected by the medical man; for I have often heard the sufferer observe that he had been sitting up in bed the greater part of the night, and that he had been easy, or his pain had been very much lessened, whilst

he maintained such a position; but that his symptoms became aggravated, as soon as he had resumed the recumbent posture."

We fancy that this proscription of the recumbent posture is a little harsh. In severe inflammatory diseases of the eye the patient not unfrequently prefers bed, for in it there is an equality of temperature, freedom from exertion, and quiescence of the circulation not so satisfactorily obtained out of it. Much we suppose must depend on the patient's wishes and his feelings.

Mr. Tyrrell passes to the conjunctiva, the anatomy of which he describes, and then takes up its morbid conditions. He admits the following varieties of ophthalmia:—simple ophthalmia—pustular ophthalmia—catarrhal ophthalmia—purulent ophthalmia—chronic ophthalmia, not as a result of acute disease, but originating in chronic form—strumous or scrofulous ophthalmia—and exanthematous ophthalmia—the two last are modifications of most of the above varieties.

SIMPLE ACUTE OPHTHALMIA.

There is nothing in the account of this to detain us, indeed the only point to which we would refer is the necessity for strict investigation of the constitutional state in the management of the disorder. Such a necessity is so obvious that, at the present day, one would suppose that it never is neglected. Yet, however obvious, it certainly may be, and occasionally is, permitted to escape attention, as several cases detailed by Mr. Tyrrell prove.

Case.—"A young lady, about eight years of age, of delicate form, was lately brought to me by her medical attendant, in consequence of her having ophthalmia, not severe, but still productive of much suffering, and sufficient to prevent her from using the eyes even for purposes of amusement; the affection had yielded in a degree to the use of leeches, purgatives, and a careful diet, but the relief had only been temporary. The obstinacy of the case under ordinary treatment, and a healthy condition of alimentary canal, induced the medical man to seek my opinion. I found that the only important deviations from her healthy condition was that her rest was disturbed, and that she was unusually hot at night, but this was attributed to the local disease, as, at the same time, she complained of increased pain or uneasiness in the eye. I was, however, satisfied that the local disease and rest were influenced by the defective cutaneous action, and I prescribed small doses of mercury with chalk and the compound powder of antimony at night, with an occasional mild aperient, a tolerably good diet, &c.; in a few days the ophthalmia was gone, her rest had become quiet and undisturbed, but at the same time the nocturnal heat and dryness of skin subsided, and the usual healthy moisture appeared."

The surgeon should carefully ascertain what is wrong, and endeavour to set that right. Yet, so far as we have seen, cases where some little particular symptom calls for some particular remedy, are not the rule, and the general treatment of an inflammatory disorder is generally the right.

Simple ophthalmia, observes our author, frequently exists with a condition of general power below the healthy or ordinary standard, and the local disease will not yield whilst this state of feebleness continues, but is so much dependent upon it, that the ophthalmia frequently subsides, as soon as general power is restored.

Very many cases of this kind result from over depletion in treating the common acute disease; others are consequent on exhaustion from febrile disease; indeed, any circumstance which reduces the constitutional vigor much below the healthy standard, will operate in maintaining this condition of conjunctival inflammation.

Mr. Tyrrell thinks that though a *low* this is rather an acute than a chronic affection, though it presents some peculiar characters:—The conjunctiva, for instance, exhibits numerous vessels, filled with red blood, of a dark or purplish

hue; these vessels are very tortuous in their courses, and occupy the same positions as the principal vessels in the more acute form of ophthalmia, but they are less numerous, as well as more tortuous; the palpebral division of the membrane is also usually more red than natural; the organ is generally irritable, and the secretion abundant; there is however less pain, less heat, and less augmentation of suffering from the recumbent posture, than in common acute cases; but the aspect of the patient, the paleness and look of depression, with coldness of extremities, and feeble, but often rapid pulse, the loss of muscular power, restlessness, and sometimes inordinate cutaneous action, evince the deficiency of power.

We would observe that few well-informed surgeons persevere in depletion, when the colour of the conjunctival vessels grows dark, and an ulcer with little injection and no disposition to deposition is on the cornea, while the general state is one of lowness. General support, or, at least, sustenance, with mild local stimulants, we believe to be the common practice.

Mr. Tyrrell acknowledges that the most troublesome cases of ophthalmia that he has witnessed have been connected with some obscure peculiarity of system. The local disease has, in these instances, been principally confined to the ocular division of the membrane, and has, in most of the cases, extended to the cornea, producing slight superficial ulceration; further, the attacks of pain have been more severe than in the ordinary disease, and the organ more irritable; considerable intolerance of light has also existed, especially during the attacks of pain, which have had a neuralgic character.

The general peculiarity has consisted in an extreme feebleness of circulation, the pulse being quick, undefined, and so weak as to stop from very slight pressure; pallor, coldness, and loss of muscular power have afforded further proof of the low condition of vascular action.

The patients who have suffered from this form of disease, have all experienced intervals of relief from suffering and irritability of the eye, though it has still remained red and weak, and on careful observation, such intervals of relief have been often found to arise, from some atmospheric change, which has been favorable to the health of the individual.

The treatment has been principally directed to the promotion and maintenance of general power, by diet, exercise, clothing, and medicine. A case which Mr. T. relates is sufficiently illustrative of the affection.

Case.—"It was that of a gentleman, about forty years of age, who was engaged in one of the principal banking-houses of the metropolis; he had suffered for above three years, before the period of his consulting me, and had been under the care of most of the medical men of London who had directed their attention to ophthalmic diseases, but he had not obtained more than an occasional mitigation of the disease. After going through the history of the treatment he had undergone, I was much puzzled what course to pursue; for he had tried almost all varieties of general and local remedies. I could not detect any important functional derangement, but only a want of general power in the action of the heart and arteries; he expressed a feeling of weakness, but attributed it to the medical discipline he had undergone. The ophthalmia was not very severe, it affected both eyes, and was attended with much irritability of the organs; but it did not altogether incapacitate him from attending to his duties in the banking-house, though it produced a good deal of suffering and distress, and compelled him occasionally to give up business for some days together. The disease was much influenced by sudden change of weather, from dry to wet. I directed my treatment principally to improve and maintain the state of the circulation by attention to the secretions, a good and generous diet, and warm clothing, with the use of tonic medicine, which I varied the form of frequently, making a change whenever the form in use became offensive to the stomach, or failed in

producing the desired effect. Yet with every care and attention I could not effect a cure; though I succeeded in getting rid of much of the irritability, and kept off any serious relapse, so that he could attend to his business with comparative comfort. After he had been under my care for several months, he, by my advice, consulted my colleague, Dr. Farre, who strongly urged a change of climate for a few months, as he considered that it afforded a prospect of a more decided and beneficial change in constitutional vigor; and, as I warmly supported the opinion of Dr. Farre, the patient made arrangements for an absence from business for three months, (the summer being at the time a little advanced,) and soon left England for the South of France; before, however, he arrived there, he experienced a beneficial change, both in the local complaint, and in general health or strength; and after a few weeks' residence in the South of France, he perfectly recovered, and much enjoyed the remainder of his holiday in wandering about; he returned to England at the end of the three months, in excellent health, and almost without trace of the ophthalmic disease. Many years have since elapsed, but I believe that he has not had any return of the disease of the conjunctiva."

Mr. Tyrrell relates several other cases, which however present no features essentially different from the preceding. In the majority of such cases, what is wanted is a steady perseverance in treatment, calculated to improve and maintain a proper degree of general power. He has found it necessary, occasionally, to change the form of tonic, and has obtained the greatest benefit from those of metallic quality, as the sulphates of iron, zinc, and copper, in very small doses; also from iodine and hydriodate of potash combined with sarsaparilla or some mild bitter, and the preparations of bark, quinine, &c.

PUSTULAR OPHTHALMIA.

Mr. Tyrrell recommends, in the treatment of this affection, very simple measures:—a moderate diminution of diet; a mild purgative, the application of a weak astringent lotion of acetate of lead, or of alum, with the use of a mild ointment to prevent adherence of the eyelashes; and rest of the organs. In acute cases, a more active plan is required, as local bleeding by leeches, greater abstinence, and medicine to act on the principal secretions more freely; but the general power must be watched, and not allowed to get much below par, which it is apt to do. Mr. Tyrrell observes:—

"I have frequently seen this affection treated at an early period, by the application of a solution of nitrate of silver, of one, two, three, or four grains to an ounce of distilled water, and, in many instances, with marked good effect, the cure being rather more rapid than by the plan of treatment which I have described;—I have also more frequently seen this stimulating remedy fail, when the cases have been afterwards more protracted and obstinate.

It is, in my opinion, a very uncertain remedy, and as the disease is usually so easily and quickly relieved by the more simple and less severe plan, I cannot recommend the use of the nitrate of silver." 41.

We must say, that so far as we have seen, the gentle mode of treatment has answered best. At the same time we think it very frequently happens that, after a time, some mild stimulating lotion is serviceable. The sulphate of zinc has seemed to answer as well as any.

CATARREAL OPHTHALMIA.

For this Mr. Tyrrell recommends the plan of treatment advised for the pustular disease; but in the former case, the general remedies may be more active

in the commencement; and locally, the solutions of alum or acetate of lead, besides being employed rather stronger, should be warmed before applied. Mr. T. usually prescribes poppy decoction with alum, (one pint and one drachm), as a lotion to be used tepid, every two or three hours.

Local bleeding is more frequently required in the catarrhal affection.

As the severity of the local disease subsides, the local applications should be gradually increased in strength, and a weak form of the citron ointment should be substituted for the simple unguent; this change tends very much to secure the patient from a chronic stage of disease. Mr. T. directs the palpebræ to be carefully dried with soft linen after the use of the warm lotion, for he thinks that the long-continued application of cold and moisture excites inflammation in the sclerotica.

Sometimes the acute stage proves obstinate, and Mr. T. has recommended change of air with good effect. He objects to the use of strong stimulating applications to the eyes. And we must confess that, after all that has been said in favour of them, we are very sceptical of their propriety.

PURULENT OPHTHALMIA.

Mr. T. describes, first, the Purulent Ophthalmia in the adult, then the disease as it occurs in the infant.

Purulent Ophthalmia in the Adult.—Mr. Tyrrell offers a very good description of the mode in which the cornea is destroyed in this disease.

"The principal supply of blood to this texture, is through the vessels of its conjunctival covering, as may be distinctly seen in some morbid conditions of these structures (*see corneitis, and vascular cornea, from granulated lid, or strumous ophthalmia*), for, the larger vessels ramify in the conjunctival layer, and send minute branches to the texture of the cornea. The occurrence of chemosis, or elevation of the conjunctiva covering the sclerotic, around the margin of the cornea, by rapid deposition in the sub-conjunctival cellular membrane, first impedes, and, then, altogether interrupts the circulation in the corneal portion of the membrane; and this arises from the pressure, at the margin of the cornea, by the deposition, and from the tension and displacement of the membrane; for the attachment of the conjunctiva, over the junction of the cornea and sclerotic, is so firm, that it undergoes little or no change, whilst rapid and extensive alteration takes place in the membrane around—but its organization is so delicate, that the circulation is easily interrupted, by the combined effects of pressure and tension.

The cornea does not mortify from an extension of inflammatory action to it, but solely from interruption to its supply of nutritious fluid. Mortification of the cornea commences in various parts of the structure; most frequently near the margin, sometimes near the centre, or between the centre and circumference; in the first position, if the disease be arrested, the slough is usually of a crescentic figure, following the margin of the cornea; in the other positions, under similar circumstances, the slough is generally round or oval." 55.

Mr. Tyrrell, like the majority of surgeons, believes the disease contagious. He has seen many instances of gonorrhœal ophthalmia in the female. It is modified by the mode of origin—by the age and constitutional vigour of the patient—and by the co-existence of fever or other severe constitutional disturbance. Thus, he says, when the local affection is idiopathic, or induced by violence, or results from the contact of matter, and the patient is free from constitutional disorder,—the specific form, or that from application of morbid secretion to the conjunctiva, is very severe, and proceeds to the destructive termination much more quickly than the others. Most frequently under these circumstances

one eye only is affected at first, and, though the second rarely escapes altogether, yet many days often intervene between the development of the complaint in the two.

If it arises from exposure to cold and damp, it is often attended with acute febrile symptoms, of catarrhal character, and, then, under the excited condition of the vascular system, the local disease proves severe and rapid in progress, and it usually attacks both eyes. Further, when it occurs with any of the acute febrile diseases, as small-pox, measles, scarlatina, &c. it is generally formidable and destructive.

The Treatment of the disease is considered by Mr. Tyrrell in reference to three stages of the complaint.

1. That without chemosis, or swollen palpebræ.
2. That with chemosis, and swollen palpebræ, but a clear cornea.
3. That in which mortification of the cornea has taken place.

The symptoms in the first stage might, without great circumspection, attract little attention. The surgeon should ascertain if the disease is attended with gonorrhœa, and should mark the general tone of the patient. If the circulation is vigorous, it should be moderated by venesection, and the effect should be kept up by abstinence, purgatives, and quiet. Great benefit may be obtained from two medicines—first, tartar emetic or ipecacuanha, in small doses, frequently repeated, to excite and keep up a condition of nausea, but not to produce vomiting, which would be injurious, as promoting ocular congestion. Second, mercurials, as tending to check deposit of fibrin, should the local disease advance. Persons of feeble power, of advanced age, of marked scrofulous diathesis, or females in an advanced stage of pregnancy, should not be submitted to loss of blood generally, but, be treated by abstinence, purgatives, nauseating medicines, and mercurials. Care must be taken, in all cases, not to let the general strength sink too low.

The head should be kept considerably elevated above the chest; such position will be found materially to mitigate suffering; leeches should be applied freely on the surfaces of the palpebræ and cheek, or, in case their use is forbidden, the angular vein should be opened, or a cupping-glass should be applied to the temple, or behind the ear; the local bleeding should be repeated on the recurrence of pain, or if the vessels become turgid, and of bright color. Warmth and moisture are serviceable for relaxing the vessels and membrane, and favoring a free discharge of pus; and may, at first, be repeatedly used, for short periods—as a minute or two: but so soon as the violence of the local symptoms has subsided, and the conjunctiva has lost some of the brilliancy and intensity of its colour, astringents should be employed;—alum is the best, which may be added to poppy decoction; at first, half a drachm to the pint, and this should be gradually increased in strength, up to six grains to the ounce, until the tumefaction of the membrane subsides; but it should be omitted on any recurrence of acute symptoms: throughout the treatment some mild ointment, or fresh lard, should be applied to the cilia and canthi, after cleansing the organ, or after using the fomentation or lotion. After the local abstraction of blood free blistering to the neck, or behind the ear, should be resorted to.

Chemosis.—The deposit which occurs in the sub-conjunctival cellular tissue, may be either fibrinous or serous: the former takes place in the most acute cases, and, by its firmness and the rapidity of its effusion, soon obstructs the corneal circulation; the latter, affording less resistance, and being thrown out with less rapidity, affects the supply of the cornea more slowly.

The disease in the second stage, with chemosis and swollen palpebræ, but a clear cornea, is hazardous, in proportion to the extent and character of the former. So long as the chemosis is incomplete, or does not embrace the whole

circumference of the cornea, the risk to the cornea is not great; but, when the chemosis is complete, the life of the cornea is in momentary jeopardy; especially if the chemosis result from fibrinous deposit—the danger being less when the cellular tissue is distended with serum. The chemosis usually commences at the lower part of the surface of the globe, and encroaches on the temporal and nasal sides of the cornea; and lastly extends above it. In examining the affected organ, therefore, the attention should be directed to this spot.

When the chemosis is incomplete, Mr. T. recommends the means already mentioned. They do not fail if energetically used. Mr. T. is averse to the ultra depletory treatment recommended and practised by some surgeons. Nor does he like the strong stimuli or astringents patronised by others.

When the chemosis is complete the treatment is too often unsuccessful. "I have tried locally," says Mr. Tyrrell, "strong solution of nitrate of silver, and the undiluted solution of the diacetate of lead; but I have never seen the slightest advantage gained, by such remedies, in the state of the disease, in which complete chemosis existed: in the early stage, I grant, that powerful astringents are sometimes of much service, as they are in the catarrhal affection; but I consider their employment to be more frequently prejudicial than beneficial, adding, as it were, fuel to the fire, and do not, therefore, recommend their use, because the first stage of this disease is always curable by simple means."

Mr. Tyrrell advises scarifications of the conjunctiva. We lately noticed his views upon this matter at large. Scarifications relieve the tension of the membrane, and permit the cornea to receive its due vascular supply.

"I was aware that incision, and excision, of parts of the conjunctiva, had been suggested and effected, in the condition of chemosis; and, that the result of such treatment had not been very satisfactory; this want of success, however, appeared to me as a consequence of the mal-application of the principle, and not from error in the principle itself; for the incisions in the membrane, and excisions of portions of it, had been generally made in a direction corresponding to the margin of the cornea, and frequently extended completely around it, but at a short distance from it; thus the vessels passing to the corneal portion of the conjunctiva, must have been in great part, if not in toto, divided, and the supply of the corneal portion and cornea cut off, or nearly so;—the operation tended, therefore, rather to augment, than diminish the mischief, it was meant to obviate: this error arose from ignorance of or inattention to the anatomy of the organization of the part.

An attempt to relieve severe phlegmonous inflammation of the arm, by a circular incision through the integuments and cellular membrane, as in amputating, would, in my opinion, be just as likely to succeed, as the circular division of the conjunctiva, in the ophthalmic disease, now under consideration.

In the plan I proposed, the incisions were to be made, through the sclerotic portion of the conjunctiva and its subjacent cellular tissue, beginning at the margin of the cornea, and extending towards the edge of the orbit, in a direction as rays radiating from a centre, but avoiding immediately the transverse and perpendicular diameters of the globe; that the larger vessels, passing to the cornea, might not be injured. The plan being decided upon, I soon had opportunity of carrying it into effect." 76.

Several cases are related in illustration, but they do not require notice. They are very favourable to the plan, which we have, in two instances, tried ourselves with great benefit. Mr. Tyrrell concludes that the beneficial operation of the proceeding is only interfered with by two extremes—great excess of arterial action with fever; or extreme feebleness of vascular power.

"It is only, therefore, in cases in which such extremes exist, that I now deem it requisite to adopt other than simple and ordinary treatment generally, such as regulating the secretions, and allowing a diet adapted to the power and age

of the patient, excepting when the chemosis is unusually firm or fibrinous, when I give mercurials to check such deposit.

When the force of the circulation is greater than natural, with or without febrile excitement, I abstract blood, but merely to such an extent, as to reduce the pulse a little below the ordinary standard. If the general power is much below what is proper, I immediately begin to promote its restoration, by a good and nutritious diet, with some stimulus, to which the patient has been accustomed, and frequently give also some tonic medicine. Locally, after the division of the chemosed part, I direct some simple fomentation to be used frequently, for twenty-four hours, and in case of pain continuing or returning, I direct leeches to be applied freely to the palpebræ, in number according to the degree of local action; after the pain has subsided, I recommend the fomentation to be made astringent, by the addition of some alum, and, as soon as the discharge acquires a whitish character, I discontinue the simple ointment, (at first employed to prevent the agglutination of the cilia,) and use, instead, a weak stimulating application, such as the diluted ointment of the nitrate of mercury, or the diluted ointment of the nitric oxide of mercury; and I further direct the strength of the lotion or fomentation, and of the ointment, to be gradually increased, or I make a change to some other astringent or stimulant, (which I generally find most advantageous,) till I perceive that all parts of the conjunctiva have recovered their healthy aspect.

When I have made the division of the chemosed membrane freely, I have not had occasion to repeat the operation; but when it has not been effectually done at first, in consequence of the excessive tumefaction of the eyelids, or from the resistance of the patient, I have had to repeat it; this has happened two or three times." 94.

When the entire cornea is opaque and dull, with complete chemosis, there is no prospect of saving vision. Yet the plan already recommended may be pursued, as most calculated to relieve pain, and to preserve what is preservable. It sometimes however happens, that only a portion of the cornea suffers, when the violence of the disease abates. The palpebræ lose their tension, their shining and florid color, and become of a purple hue, dull and somewhat corrugated; the conjunctiva becomes of a pale pink color, and flaccid; the secretion thin and whitish, although still often mixed with red particles of blood. All this should be noted, for, now a rough examination may destroy the eye. A sudden and careless pressure on the globe may force out the humours. The examination of an eye in this condition should, therefore, be conducted on a most cautious and delicate plan, so as to expose the cornea, with the least possible force; to obtain a proper view of the cornea some degree of force is requisite, in consequence of the swollen state of the palpebræ, but it is easy to apply the requisite force so gently and gradually as not to incur risk.

Another evil, observes our author, results from over-depletion—supposing the cornea to have suffered from a partial mortification, and the mortified part to have separated or sloughed off, no healing or healthy action ensues, the local power being inadequate to its institution; a transparent depression then denotes for a time the position and extent of the loss of substance, but unless some general or local means, or both, be resorted to, to excite a proper action, the exposed surface of the depression assumes a dull light brown, or dirty-looking aspect, becoming opaque; and this appearance extends also in a small extent around the edges of the depression; after a little while this dirty-looking layer separates, and exposes again a transparent clear surface; but again, under exposure and deficient power, a second brownish opaque slough forms and separates, and so on, until that which had at first been of trifling extent, becomes by degrees most formidable, and perhaps destructive of vision.

Local and general means should be resorted to to check this. The first may consist in the application by injection of a solution of nitrate of silver—one, two,

three, four, or more grains, to an ounce of distilled water,—beginning with the weak solution and gradually augmenting the strength. The general treatment must be directed gently to support the patient, by diet, cautious stimulants, or tonics.

Mr. Tyrrell recommends, when the disease breaks out and prevails, as it too often has done, in any public institution, certain precautionary measures which we quote.

“ First,—I should advise, therefore, that when the purulent ophthalmia attacks several individuals in the same community, they should be immediately separated from the general mass, and sent to some distant place, which would offer a decided change; but in which the soil should be dry, and free from exposure to the east wind.

Secondly,—that those who had been previously in close association with the infected parties, should be also separated from the general mass. I mean, particularly such as had slept with any of those in whom the complaint had appeared, or who had been in close contact with them, either for purposes of study or recreation. These parties might be put into a separate building, but should be kept from close intercourse, until sufficient time has elapsed, to determine whether they be infected or not; and they should be carefully examined at least twice in the day, that the earliest symptom of the disease might be detected, so that those in whom the disease appears, might also be immediately separated from the others.

Thirdly,—that the clothing, bedding, &c. of the infected persons, should be submitted to the ordinary modes of cleansing, and immediately afterwards exposed to a high temperature of dry heat, which appears to have a considerable influence in destroying any property of infection in such articles: and this plan might, perhaps, be advantageously adopted, with regard to the bedding and clothing of the uninfected, previously to their separation, individually, or altogether, from the residence in which the disease had appeared.

Then, fourthly,—that each and every one of those liable to the contagion, should also be carefully examined twice every day, in order to detect any disease, and to separate any infected parties.

Fifthly,—that every attention should be given to the cleanliness of every individual; that the diet and clothing should be such as would be likely to maintain a good condition of strength and temperature; and that the assemblage of many together in the same apartment, for more than a few minutes at a time, should be prevented.

Lastly,—that the apartments and buildings generally, in which those infected had resided, should be well cleansed and fumigated.” 100.

Purulent Ophthalmia in the Infant.—Speaking of the treatment of this affection by the alum lotion, Mr. Tyrrell prefers to have it used just warm: and, at the time of its application, the upper eyelid should be gently raised by its integument, so as to allow some of the lotion to pass to the surface of the conjunctiva. This he thinks much better than the use of the syringe, which he is confident frequently does harm, for it is scarcely possible to use it without inflicting violence on the conjunctiva; and the inexperienced or incautious operator with it, runs great risk of getting the disease from some of the solution, with matter, getting into his own eyes.

When the *second stage*, that of chemosis, sets in, this is always indicated, says our author, by change in the palpebræ, which swell, and assume a red, tense, and shining character,—the extent of these symptoms being usually in proportion to the extent of the chemosis: this tumefaction of the eyelids is frequently such, as to prevent the surgeon from obtaining a view of the cornea, even by the exercise of great violence; it is therefore most satisfactory, that we can determine the condition of the disease by the aspect of the palpebræ, though we can-

not at once form our prognosis, as when we can get a fair inspection of the cornea. So long as the eyelids are swollen and tense, and present a shining and florid surface, the cornea is generally safe, although it may be upon the verge of destruction; for no sooner is its vitality lost, in part, or in toto, than the tension of the palpebræ diminishes, the color becomes purplish, and the surfaces lose the shining or erysipelatous appearance; the discharge also becomes thinner and whiter; whilst under the circumstances first described, the secretion is thick and yellow. If the cornea can be exposed at the time that the palpebræ are swollen, and of brilliant color, it will rarely be found to be in any great danger, as the chemosis is very rarely then complete; on the other hand, when the cornea cannot be seen, in consequence of the swollen state of the eyelids, it is probable that the chemosis is great, perhaps complete, but it is not necessarily so.

As the surgeon cannot expose the cornea, or ocular conjunctiva, he cannot, of course, divide the chemosis. "He may, however," says Mr. T. "soon reduce the palpebræ, so as to obtain a view of the cornea; and, if necessary, he might make the division of the chemosed conjunctiva: this can be accomplished, by applying a leech or two to the surface of the eyelid, according to the age and strength of the little patient; after the leech has filled itself, and fallen off, bleeding from the bite should be encouraged, by the application of warmth and moisture, until the surface becomes nearly colourless, and somewhat flaccid: in children of two or three days old, a single leech will sometimes suck as much blood as will produce this effect, and in most cases it is necessary to arrest the bleeding after a short time, for the infant will not bear the loss of much red blood: by this means, the tension of the part being reduced, the cornea may be exposed with much less force, and, unless a great state of prostration should forbid it, the chemosis might be then divided, as in the adult."

Mr. Tyrrell has not yet tried the operation in the infant. If the disease proves destructive to vision, it generally is so from neglect. Out of a large number of cases in which the tumefaction of the eyelids has been excessive, (appearing almost bursting,) but in which the color has been florid and the surface shining, he hardly recollects a single instance of even partial slough of the cornea ensuing under the influence of local bleeding, to such an extent as to nearly destroy the color of the palpebræ; which usually also produces some general prostration.

After the abstraction of blood, the weak solution of alum should be used frequently tepid, and increased in strength, if necessary. The cilia and canthi should be lightly touched with a camel's hair brush dipped in some simple ointment—and, if the case proves obstinate, a weak solution of the nitrate of silver may be resorted to.

Should the cornea, on inspection, be found more or less hazy, and threatened with mortification, Mr. T. would advise division of the chemosis, four incisions being probably enough.

CHRONIC INFLAMMATION OF THE CONJUNCTIVA FOLLOWING PURULENT AND CATARRHAL OPHTHALMIA.

Mr. Tyrrell describes, under this head, the complaint commonly known as "granular lid." He looks on that complaint as the result of the ophthalmia mentioned, and believes that he has shewn that these diseases commence in the palpebral division of the conjunctiva, and from thence extend to the ocular portion. They disappear in the contrary order; leaving, first, the ocular part of the membrane, or that in which they appear last, and linger in the palpebral portion of the tunic, or that in which they first appeared; and, in this division of the membrane, the morbid action may remain in so trifling a degree as to es-

cape the observation of the careless practitioner, who may be satisfied with the perfect restoration of vision, independently of slight occasional interruption from a collection of superabundant secretion. In order to prevent the occurrence of the chronic affection, the palpebral conjunctiva should be carefully examined, when the acute disease appears to have been completely subdued; and if the membrane of the eyelid has not perfectly recovered its natural aspect, the remedies should be continued until all morbid appearance be subdued. The examination should extend to the conjunctiva of both eyelids.

He has, he assures us, repeatedly observed, that according to the severity of the acute stage, and in proportion to the extent of exhaustion created by the treatment employed, has been the risk and rapidity in the development of the chronic form.

We see nothing particular in Mr. Tyrrell's observations on this complaint. But his treatment of it when the stage of "granulated lid" has set in, that is, when the villi of the palpebral conjunctiva have decidedly enlarged, should be quoted. He first sets forth Mr. Saunders' plan of removing the villi with the knife, and comments on its inefficiency. He then relates a case illustrative of his method.—"I made frequent examinations of the diseased membrane; and, whenever I found it to be of a deep red colour and turgid, I directed a leech to be applied to the outer surface; but when it presented a lighter colour and was softer to the touch, I had applied immediately to it a more powerful astringent than I had previously used. That which I applied most frequently, and from which the most good resulted, was the *solution of the diacetate of lead* undiluted. It was smeared upon the diseased membrane by means of a camel's hair brush, the part being exposed by eversion of the eyelid, and cleansed from secretion by a piece of dry lint. Thus the astringent came in immediate contact with the morbid projections. I also occasionally applied the sulphate of copper, in substance, to the granular surface under similar circumstances; but it was used lightly, and not allowed to rest long enough in contact with the surface to produce an escharotic effect."

The plan, he informs us, answers, but he has occasionally modified it a little, having now and then incised the tumid membrane very lightly, by transverse incisions, extending the whole length of the tarsus; not so deep however as to injure the tarsus, but only to open the vessels of the diseased conjunctiva of the eyelid. He has usually made three or four parallel incisions in each superior eyelid; and afterwards has encouraged bleeding from the part, by the application of a sponge moistened with hot water; and then as soon as the vessels have been pretty well emptied, he has applied a powerful astringent.

In some few cases change of air has been requisite. When the granulations are large and flabby, the cure is generally slow. General treatment calculated to invigorate—the use of the undiluted solution of the diacetate of lead—and when the granulations are small, hard, and pale, the light employment of the sulphate of copper, are the measures that he recommends, and he adds repeated blisters behind the ears.

SCROFULOUS OPHTHALMIA.

Mr. Tyrrell thinks, and most practical surgeons will agree with him, that there is no particular form of ophthalmia which, *par excellence*, can be called the scrofulous. The strumous constitution can modify them all, though the simple and pustular or phlyctenular forms are the most affected by it. The prominent feature is extreme intolerance of light.

On the subject of treatment Mr. Tyrrell has not much to say. General means and remedies are indispensable, of course. As local means, Mr. T. rarely employs any others than counter-irritation, by means of small blisters placed be-

hind the ears, or above the eyebrows; never, however, continuing the irritation, by promoting discharge from the blistered surfaces by stimulating applications, but preferring the repetition of the blister. He generally uses simple warm water, or a decoction of poppy-heads or chamomile flowers, with, now and then, a few leeches to the palpebræ, when the conjunctival vessels are numerous and very fully distended with red blood.

"Many surgeons employ more powerful local agents in the treatment of this disease than those I have recommended; but, a very extended and impartial trial of such means, has induced me, by degrees, more and more to lay them aside, and adopt the simple plan which I have detailed. I have seen obstinate cases much benefitted, for a time, by the use of some severe counter-irritant, as the tartar-emetic ointment, issues, setons, &c.; but I have seen much more evil than good result from these means; and most sincerely believe that the disease is to be more effectually and permanently removed by the plan I have proposed. To astringent and stimulating applications to the organs themselves, I have very strong objections; arising from the observance of the frequent and serious mischief they produce.—I mean the common astringent and stimulating lotions, ointments, or drops. If they are employed at all, it should be when any general error of system, or important functional derangement has been removed; and I believe, that the advantage frequently obtained by their casual use at such a period, has led to a very exaggerated idea of their efficacy." 162.

We must say that, so far as we have seen, we are quite disposed to agree with Mr. Tyrrell.

CHRONIC SCROFULOUS OPHTHALMIA.

The characteristics of this form of ophthalmia are the following:—

"In the most simple cases of chronic disease, the only differences which can be observed, exist in the number and colour of the vessels carrying red blood, which become less numerous, more tortuous, and of a darker or purplish hue, as the chronic form is assumed; and if there be discoloration of the palpebræ, such discoloration is also of a dark character. Otherwise, whatever may be the nature of the affection in its origin, whether simple, pustular, or catarrhal, as it affects the scrofulous person,—under continuance, it usually implicates nearly the whole of the ocular portion of the conjunctiva, as well as the palpebral. In the former, the vessels become large and tortuous, and of a dark red or purplish hue; and many pass from the sclerotic portion of the membrane to its corneal division: and whenever this occurs, the latter becomes thickened and loses its transparency, especially in those parts in which the vessels are rendered apparent, from being distended by red blood. In some cases, but few of these vessels are to be perceived, whilst, in others, they are exceedingly numerous; but the nebulous condition of the membrane is usually greater in proportion to the number of these vessels. This state of cornea is denominated *vascular and nebulous*, similar to that which results from the irritation of the granular eyelid as a consequence of chronic purulent or catarrhal inflammation; but there is a very marked difference in the mode of distribution of the vessels carrying red blood to the cornea. In the case of granular eyelid, they are rarely found encroaching upon the cornea in any direction, except from the upper part, as I have previously described; but in the scrofulous disease, they will be generally perceived passing over the sclerotic to the surface of the cornea, at nearly all points of the circumference of the latter, though the larger vessels usually take their courses from the directions of the recti muscles. Now and then also, we have a granular state of the eyelids. This, however, but rarely happens, unless the disease in its origin has been of a catarrhal or purulent kind." 165.

Indolent ulceration of the corneal part of the conjunctiva is common.

The subjects of this disorder are generally pallid, with a feeble circulation.

The treatment must, naturally, be directed towards the improvement of the general health. When the functions are improved, slight local stimulants, such as the *vinum opii*, or a weak solution of the bichloride of mercury, may be dropped into the eye once in twenty-four, or forty-eight hours. If the application creates a severe and continued pain, it rarely effects good, and should be laid aside; but if the smarting it produces does not exceed a few minutes in duration, leaving the eye tranquil, it may be continued usually with the best effect. Counter-irritation, in a very moderate degree, by small blisters applied behind the ears, may be resorted to when there is much intolerance of light, excepting when the powers of the patient are exceedingly depressed.

The more severe cases, in which the corneal conjunctiva is affected are exceedingly difficult to manage. The tendency to relapse is most troublesome. Every possible general precaution should be taken, and the general treatment should be such as to sustain without stimulating. Mr. Tyrrell speaks highly of Battley's solution of the yellow bark.

Mr. T. believes that warm water is the best local application, though stimulants are sometimes advantageous. Mr. T. speaks favourably of counter-irritation, but slightly of setons and issues. He is confident that these are often prejudicial in children and in weakly persons. He relates two cases in support of this opinion.

EXANTHEMATOUS OPHTHALMIA.

This is—inflammation of the conjunctiva, with erysipelatous affection of the palpebræ. A rare disease, allied to the catarrhal.

The disease presents the following characters:—The eyelids are somewhat swollen, red, and shining, particularly at the margins; but the color is much lighter and the tension less, than is common in erysipelas; the cilia are partly loaded by a light yellow viscid matter, and some similar morbid secretion may also be usually found at the inner canthus: the palpebral conjunctiva is red, tumid, and villous; and the ocular part of the membrane is of a dirty yellowish red color, and elevated around the cornea by a deposit of serum into the subjacent cellular membrane, (*serous chemosis*;) this deposit is greatest at the lower part of the circumference of the cornea, and least at the upper part, from the gravitation of the fluid in the cells; it is also often irregular, causing protrusion of the membrane, at several points, giving the appearance of vesicles.

The patients who present this form of ophthalmia are generally weak, with disturbance of the digestive organs. They are generally, too, advanced in life and of irregular habits.

A few smart purges, strict diet, and the local use of a slightly astringent lotion and ointment will usually soon effect a cure. If there is much gastric uncasiness, an emetic proves of service.

The forms of ophthalmia, most common in the fevers which are attended by cutaneous eruption, are, the pustular and catarrhal, or muco-purulent: the latter commences with symptoms, so similar to those which usher in the purulent disease, that the medical man should be on his guard. If then, the conjunctival affection begin with much pain and heat, and there be a rapid change in the palpebral part of the membrane, so that it become thickened, villous, and of a deep carmine color, and at the same time the secretion present a yellow tinge, there is every reason to dread the development of the acute purulent inflammation; and it will most probably take place, unless means be pursued to check and subdue the first stage.

“Whilst in the first stage, the disease may usually be subdued by local bleeding, with leeches, and the subsequent use of warmth and moisture, with some

slight astringent, as alum; the means appropriate to the cure of the febrile disease otherwise, as purgatives, abstinence, &c. will aid in subduing the local complaint; but should the attack commence with severe pain, and rapid tumefaction of the conjunctiva, with other symptoms of acute kind, and the circulation be full and incompressible, and the patient possessing good constitutional power, I can discover no good reason why the force of the circulation should not be lessened, by abstraction of blood from the arm; it would probably lessen also the violence of the febrile disease, and expedite recovery: the surgeon should, of course, be extremely cautious not to remove more blood, than would be requisite to reduce the force of the circulation a little below the ordinary standard, and not so much as to produce prostration. I have seen this plan adopted in the first stage of purulent ophthalmia, occurring with small-pox, and with the best effect, generally, as well as locally. The remedy is, however, a hazardous one, and should not be adopted, without a perfect conviction of the power of the patient being good, and the action of the heart and arteries being above par, not in frequency, but in force." 181.

We would recommend surgeons to be very cautious in employing general bleeding in the exanthemata. We would undoubtedly pause ere we resorted to it.

The local disease comes on at various periods of the febrile attack; sometimes quite in the commencement: occasionally during its height; and, sometimes, as the severity of the general disease is passing off. Mr. T. prefers general bleeding when the ophthalmia is developed in the early stage of the fever. When chemosis, &c. have supervened, Mr. T. would adopt nearly the same plan as if the fever were not present, though he would be more cautious in lowering the patient.

During, says our author, the continuance of, or subsequent to some of the exanthematous diseases, when the febrile action has been unusually severe, and has occasioned great prostration of the general power, inflammation of the conjunctiva sometimes arises, attended with ulceration of the cornea, by which this transparent texture usually suffers extensively; the progress of the ulcerative process being rapid. Mr. Tyrrell has seen the same thing in cases of typhus fever.

"I would recommend," says Mr. T. "that the treatment should be such, as is best calculated to promote and maintain a good state of the general power; as, a nutritious diet, with the moderate use of an accustomed stimulus, tonic medicines, with proper regulation of the secretions, and the use of mild astringents, or stimulating lotions to the eyes. I should not advise the application of any powerful stimulus locally, until the general power is much improved: for, during the state of great debility, a strong stimulus may excite a degree of action, which the part is not able to support; and more extensive sloughing may result. A solution of nitrate of silver, injected upon the surface of the ulcer or depression, may be of service, when the general power is considerably re-established, and no healthy local action appears to take place." 184.

We have completed a notice of the ophthalmiae, and have extracted such facts or opinions as we think are calculated to be useful. In our next number, we shall take up the remaining portions of the work, and complete our account of it. We need scarcely add, that we consider it a very valuable addition to the existing books upon diseases of the eye, and we believe that it will prove eminently useful.

Spirit of the Foreign Periodicals.

REMARKS ON STAMMERING, BY A SUFFERER.

THE following observations on this annoying infirmity are from the pen of a physician, who, till his twentieth year, had been afflicted with stammering, and who then cured himself in the manner which we shall afterwards notice.

Most writers on stammering have attributed it to the irregular and convulsive movements, or to the faulty position in relation to the teeth and palate, of the tongue and lips. Thus M. *Hervez de Chegoix* mentions the absolute or relative smallness of the flesh of the tongue, and the shortness of the frænum as its most frequent causes: and he has reported two cases where a cure was effected by dividing this bridle.

But in a large majority of stammerers there is no irregularity whatsoever in the organs of speech: and even if there was, the admission of such a cause would not account for the infinite varieties of the infirmity and the influence which moral emotions exert upon its development.

MM. *Sauvage* and *Itard* regard debility of the muscles of the tongue as one of the most frequent causes. But do not persons that stammer execute with the greatest ease and rapidity all the various movements of the tongue and lips?

Is it not rather a state of spasm than of debility? How too, on this hypothesis, are we to explain the spontaneous cure of stammering as life advances, when debility, local as well as general, must necessarily increase?

Other writers seek for the cause of the malady in the action of the brain on the muscles of the voice—an explanation which may be quite just, indeed, if it were not so vaguely expressed: a vagueness which seems to have actually bewildered some writers who have adopted the explanation in question. Thus, *Rullier*, in the *Dictionnaire de Medecine*, says:—"In stammering, the cerebral irradiation which follows an act of thought, and becomes the moving principle to set in action the muscles necessary to the oral expression of the ideas, bursts forth with such impetuosity, and is reproduced with such rapidity, that it exceeds the mobility of the agents of articulation."

But this is surely paying too great a compliment to stammerers; for my part I must confess that I never experienced that rapid flow of ideas and impetuous action of brain, which the author talks of.

M. *Magendie* attributes stammering to such a deficient action of the organic intelligence as is capable of disturbing the movements of the vocal organs, which are influenced at the same time by the nervous system of organic life, and by the action of the brain.

All that we can reply to this explanation is, to ask what the author means to announce; for to us his language is quite unintelligible.

But to form a more accurate idea as to the cause of stammering, let us now briefly notice what we observe in a person afflicted with this infirmity, when he attempts to speak.

In some cases—and this is the least severe form of the malady—the person speaks sufficiently fluently for a greater or less length of time; but if the pronunciation of a word which begins with certain consonants, such as *b*, *p*, or *v*, coincides with the close of an expiration, then the breathing becomes embarrassed, hurried, and panting, and the efforts of the person to pronounce the word are

accompanied with convulsive movements of the lips; at other times the lips are in a state of tonic spasm. At length the person succeeds in overcoming this difficulty, by taking his breath or making an inspiration.

In other cases, where the stammering is more decided, the person often cannot utter without difficulty almost any sound, even when the word which he wishes to pronounce begins with a vowel, (as was the case with myself in respect to the word *oui*); the features and neck swell up; the jugular veins become distended; and the person tosses his arms about to find relief.

These two degrees of the infirmity are often observed to co-exist in the same person: if he becomes embarrassed by a word which begins with a consonant which is not easily pronounced, the fear of not being able to proceed renders the respiration panting; and then any efforts at speech are quite impracticable.

In both degrees or stages of the malady, *the stammering ceases after a strong inspiration*; but it returns at once if the person does not continue to respire regularly, and the more frequently and badly if his breathing becomes agitated, and he strives much against it.

The great object, therefore, is to bring and keep the respiration in a quiet tranquil condition, and cause it to follow a certain degree of cadence, such as we use in singing or in declamation. If the person can but once effect this, he will no longer stammer.

From what we have now said, it is evident that in all the various sorts or degrees of stammering, its essential cause consists in a convulsive condition, either of a tetanic or a choreic character, of the respiratory function—the effect of which is, either to disturb more or less, or altogether prevent, the articulation of sounds.

What occurs in the lips, tongue, and throat, is not the essential and primary cause, but is altogether accessory; and it is according to which of these parts is chiefly affected, that the different varieties of the infirmity are produced.

The immediate cessation of the irregular convulsive movements by taking in a deep inspiration, clearly shews how intimately they are connected with the cause now mentioned. It was by attending to this simple means, suggested to me by Dr. *Lindt* of Berne, that I cured myself at the age of twenty years. The cure, indeed, was aided a good deal, I believe, by the employment at the same time of gymnastic exercises—the effect of which is powerfully to increase the influence of the will over the muscular system in general. Indeed it has been by their influence in regulating the act of breathing, that the efficacy of various means, which have been recommended and found useful, at various times, in the treatment of stammering, is to be accounted for. In this way the practice of declaiming on the sea-shore with a pebble in his mouth cured, it is well known, Demosthenes of old.

M. *Itard* has advised the use of some mechanical means to keep the tongue raised, and he makes his patients at the same time speak in a foreign language. This plan of keeping the tongue raised towards the palate has been recommended by other writers. By this simple means, Madame *Leigh* assures us that she effected a cure in upwards of 150 cases.

But however useful it may be to a person who stammers to acquire a certain control over the movements of the tongue, let it be ever kept in mind, that no permanent benefit will be derived unless the patient acquires, at the same time, the power of regulating his breathing—so that whenever he begins to hesitate or falter, he at once draws in a full breath. Madame *Leigh* imposed upon her pupils absolute silence, except during the hours of practising: and she always observed that those who had the greatest mental energy and power over their will were the most easily and quickly cured.

M. *Colombat*, although his theory of stammering is far from being correct in our opinion, has recommended a most judicious method of treatment, which if

rightly pursued is always sure to effect a cure. It consists in the adoption of the following three means: 1, giving the tongue such a position that its apex is directed upwards and backwards; 2, taking in a deep breath at the commencement of each phrase, and repeating this more or less frequently; and 3, marking the time in speaking by the movements of the thumb upon the fore finger.

By following out these simple rules, it is almost impossible for any one to stammer; and when we consider that this method of treatment consists essentially in causing the person to inspire at the commencement of each phrase, and marking the regular return of the inspirations by the movements of the thumb upon the finger, we at once understand its physiological explanation.

M. Serres' plan consists in making the person accompany the utterance of each sound with a powerful movement of the arms; he does not trouble himself about the situation of the tongue. Now this plan will often succeed as well as that which we have just recommended.

But neither M. Serres nor M. Itard his reporter, who is surprised at the singularity of this method, seem to have perceived that every muscular effort is in fact made during the act of expiration, and therefore that the pupil, to enable him to accompany the emission of any sound with a movement of his arms, must have always a provision of air in his lungs, and that thus he acquires the custom of speaking only during expiration.

There cannot be a question as to the utility of gymnastic exercises in increasing the energy of the will and the action of the brain upon the whole muscular system. It is a novel and a most practically useful idea of M. Serres, that the treatment of stammering should consist in a *gymnastique* of the respiratory and the vocal organs.—*Gazette Medicale*.

STATISTICAL RESEARCHES ON PNEUMONIA.

The following conclusions are deduced from a careful comparison of 75 cases of active pneumonia observed in the wards of La Charité hospital, and under the care of M. Bouillaud. They have been collected by M. Pelletan; and his memoir, founded upon them, was recently reported upon to the Royal Academy by M. Rayer to whom it had been referred.

1. Pneumonia affecting one lung is more frequent than pneumonia of both lungs simultaneously;—in the ratio of 7 to 2.

2. The right lung is more frequently the seat of pneumonia than the left one—in the ratio of $2\frac{1}{2}$ to 1. The greater frequency of the disease in the right side had already been noticed by previous writers, although they differ from M. Pelletan, and from each other as to the exact ratio of frequency.

3. The base of the lung is more frequently affected than the summit—in the ratio of $1\frac{1}{2}$ to 1.

4. The age or duration of the pneumonia being the same, the degree or severity of the disease has been found to vary much in different cases; and it is only in the extreme limits that it has been possible to establish a relation between the duration of the inflammation and its development.

(The meaning of this sentence is anything but clear: we scarcely know what the author wishes to announce.)

5. The disease is twice as frequent between 17 and 37 years of age, as at every other period of life.

6. It is more frequent in men than in women;—in the ratio of 10 to 1.

7. The influence of cold as the exciting cause has been remarkable in seven-ninths of all the cases.

8. The frequency of the pulse has not afforded any exact measure or indication of the intensity of the disease nor of the point which it has reached. It is

not, however, to be denied, that the acceleration of the pulse is a sign of considerable value, especially when it continues or increases after blood-letting.

9. The frequency of the inspirations has seemed to measure very exactly the degree of the disease, and to indicate its gravity.

10. Prostration and delirium have in general existed when the inflammation occupied the summit of the lung; this coincidence was of much more frequent occurrence than in pneumonia of the base.

11. As to the treatment of pneumonia, when it is *franchement inflammatoire*, repeated blood-letting, according to the formula of M. Bouillaud, formed its basis. There were only two deaths in 55 cases; and the duration of the disease was incontestably shortened.

12. Blisters were rarely useful in adults; occasionally in children; always in old persons.

M. Rayer, in reporting upon the memoir of M. Pelletan, very properly shewed that the question of the statistical or arithmetical history of pneumonia, or of any other disease, although apparently very simple if deduced from an ample number of cases, contains various elements which require to be attended to with the greatest care.

For in truth pneumonia is not the same malady in children as it is in adults and in old persons: and again, when it prevails epidemically, it is in many respects very different from that form which occurs in a plethoric person after exposure to cold. It is necessary also to take account of secondary pneumonias, of bilious complications, and of a multitude of other circumstances, before one can fairly draw any conclusions of general application.—*Gazette Medicale*.

Remark.—It will be observed by these very brief remarks of M. Rayer that he is a much less hasty reasoner, and less *heroic* practitioner than his confrere, M. Bouillaud.—*Rev.*

SUGGESTION IN PARACENTESIS THORACIS.

Case.—A youth, after suffering for a month from a mucous fever, became affected with all the usual symptoms denoting a pleuritic effusion on the right side, which was fuller and more prominent than the other. Dr. Petit determined to perform paracentesis of the chest; but some hours before making the incision he cauterised the intercostal space with the *potassa fusa*. In the evening the cauterised part had become quite white, and its circumference was oedematous. After cautiously dividing the integuments and intercostal muscles with the scalpel, he reached the pleura, which he then opened. Immediately a stream of sero-purulent matter, very offensive, was discharged from the wound: altogether there must have been a pound. This patient gradually recovered, and ultimately he was restored to perfect health.

Remarks.—Dr. Petit considers that it is very useful in the operation for empyema to cauterise the spot where we intend to make an opening into the pleura. This has a double advantage:—1, the pain of the subsequent incision is very trifling; and, 2, the appearance of the integuments affords a very valuable diagnostic sign. For the facility with which the eschar becomes white, and with which the surrounding integuments are affected with oedema, will be found to indicate the presence of a subjacent fluid. This remark is applicable to the diagnosis of collections of fluid, simple or purulent, in all parts of the body.

Dr. Petit prefers the bistoury to the trochar in performing paracentesis thoracis. He very properly recommends that the condition of the liver and spleen be ascertained before we determine between what ribs the perforation should be made. He has known the application of the caustic on the intercostal space

between the fifth and the sixth ribs fail of making an opening into the cavity of the pleura, and induce a peritonitis which proved fatal.—*Gazette Medicale.*

If *M. Petit's* observations are confirmed, they suggest a most useful hint in not a few cases, where a certain degree of uncertainty must always exist.—(Rev.)

M. PIGEAUX ON THE DISEASES OF THE HEART.

It is almost unnecessary to allude to the interminable and ever-changing discordance of opinion of auscultatory writers on the seat and cause of the sounds of the heart.

M. Pigeaux dissents, as a matter of course, from the views of other writers, and has an opinion of his own, which by the bye he has materially modified from what it was a few years ago.

He describes the rhythm of the movements of the heart as embracing three periods—in the first the auricles contract, in the second there is a repose and silence; and in the last the ventricles contract. Here are his own words:—

“Let us suppose for an instant the heart entirely empty:—the blood then flows in upon it from all sides and in a continued stream, by the incessant emptying of the large veins, which terminate in it. The blood flows directly into the auricles, and as the auriculo-ventricular valves are down, it falls by its own weight into the ventricles until it fills them. When the heart is once full, let us see what takes place. The auricles will not contract first; for such a movement could effect nothing, seeing that the ventricles are full at the time. The ventricles themselves therefore contract first: the blood pressed on all sides pushes back the auriculo-ventricular and the sigmoid valves; these last give way and permit the blood to be propelled into the arteries. Immediately after the contraction of the ventricles, the auricles contract in their turn, and project their contents into the ventricles, which at the time are partially empty and approximated to the ribs. After these two successive contractions follows the repose of the whole organ; the heart falls into an entire in-action (resolution), which, it has generally been supposed, is simultaneous with the ventricular dilatation already completed. This repose lasts for a rather shorter period of time than that of the contraction. The ventricles finish by becoming filled during this interval, and the auricles continue their dilatation. Then, again, the rhythm of the movements recommences with the contraction of the ventricles; the cardiac circulation is completed.”

From this extract it appears that *M. Pigeaux*, has reproduced the opinion of *M. Laennec* himself as to the rhythm of the heart's movements.

It may indeed be justly asked of him, what are the grounds for his resuscitating a theory which has been completely disproved and rejected by all recent writers? What facts or experiments does he adduce to disprove the assertions of *Haller* and of many modern physiologists, among whom *Dr. Hope* deserves to be particularly distinguished, that the auricles contract before the ventricles, and that the contraction of these cavities follows immediately afterwards, without any intervening period of repose between these two movements? *M. Pigeaux* has certainly not adduced any such facts in his work; and he cannot therefore reasonably expect any one to believe it merely because such may now be his opinion; and this opinion too differing very materially from *that* which he held a few years ago. Then he maintained that it was the shock of the blood propelled by the contraction of the auricles against the walls of the ventricles that was the cause of the first sound, and that the second sound was produced by the friction of the stream of blood on the parietes of the aorta when projected into this vessel by the ventricle.

In the following paragraph we have a summary of his present opinions :—

“ *Explanation of the physiological sounds of the heart.*—1. First sound, contraction of the ventricles, dull sound, inferior sound caused by the friction of the blood against the walls of the ventricles, and the orifices and the parietes of the large blood-vessels.—2. Second sound, contraction of the auricles, clear sound, inferior or upper sound caused by the friction of the blood against the parietes of the auricles, the auriculo-ventricular orifices, and the cavity of the ventricles.—3. Period of silence and repose, the blood continues to distend the auricles and the ventricles, entering these cavities without producing any sound.”

It has probably been to escape from the objection, fatal to his former opinion, that the first sound was not simultaneous with the diastole of the ventricle, that he has recently modified his views, and that he now ascribes this sound to the friction of the blood against the parietes of the ventricles during their contraction. The French reviewer of his work objects to his present doctrine in the following words :—

“ We will not repeat our objections that the author has not supported his opinion with any direct facts or experiments, and that he has reversed the rhythm of the movements of the heart; but we will simply ask of him how he supposes that, when the ventricle is full, a sound can be caused by the friction of the particles of the blood against its parietes. During the contraction of the filled ventricle, the movement of the blood can take place only at the mouth of the aorta, and every other point of its parietes must remain quietly in contact with the liquid molecule which rests upon it; this molecule presses on the adjoining one, and this again on its neighbour; and thus the movement is communicated *de proche en proche* to those which are nearest to the arterial opening, where it (the movement) takes place. It is therefore only at the end of the ventricular contraction that the molecules in contact with the parietes of the cavity are set in motion;—whence it results that the first sound of the heart cannot originate in or commence with the friction of the blood-molecules against the ventricular parietes, and that, even at the close of the contraction, this friction must surely be too feeble to produce so distinct a sound as we hear on auscultation. We therefore cannot understand how, in the theory of M. Pigeaux, the first sound can be the lower or inferior one.

Neither can we admit the explanation given by M. Pigeaux; and although the objections which he has brought forward against the numerous theories which of late years have been proposed by different writers, are far from being destitute of force or foundation, we are obliged to choose from among those which are not directly contrary to the results of experiments, or in other words, which do not reverse the order of the movements of the heart.”

It is indeed too true that there is still a most perplexing ambiguity as to the cause of the sounds of the heart, and that the wisest heads among the auscultators still differ very essentially from each other on this and some other points of cardiac pathology. How then shall he attach great value to those minute and finely drawn distinctions of auscultatory phenomena which some writers have attempted to establish? and even if these distinctions were really well founded, what practical good we ask would result from our knowing for example that it was the mitral or the tricuspid valve and not the sigmoid valves of the aorta or pulmonary artery that were affected in any particular case? The treatment in either case must be alike.—*Archives de Médecine.*

ON THE AUSCULTATORY SIGNS OF THE EARLY PERIOD OF PHTHISIS.

M. Fournet, whose recently published Clinical Researches on the above subject

have received the prize at the Concours of hospitals, dwells with great emphasis on the importance of attending to the *expiratory* as well as to the *inspiratory* sound during each act of respiration, as affording a most useful means of diagnosis in the early stage of pulmonary consumption.

"The respiratory murmur," he says, "if examined attentively with the ear, will be found to consist of two sounds, quite distinct the one from the other, and which correspond with the entrance of the air into the pulmonary cells and its expulsion from them. The double character of the murmur had not escaped the notice of *Laennec* himself; but it is chiefly to the observations of *M. Andral* and of *Mr. Jackson* (of Baltimore?) that we are indebted for the first accurate remarks upon the practical advantages that may be derived from attending to it in the diagnosis of certain pulmonic diseases."

M. Fournet has very ingeniously laboured to shew that in a very early stage of the formation of tubercles in the lungs the inspiratory and the expiratory sounds are uniformly more or less altered from their normal characters, both as it respects their duration and their intensity, and this too at a period of the disease when auscultation, practised in the usual manner, affords none but the most negative results.

The important alteration or modification consists in a diminution, more or less marked, of the duration and intensity of the inspiratory sound, and in a correlative and parallel augmentation of the duration and timbre of the expiratory sound.

To use the numerical language employed by *M. Fournet* to denote the various degrees of change, the inspiratory sound in the healthy state being considered as 10 in reference to its duration and intensity, it may gradually decrease to 8, 6, 4, 2, or it may even cease almost entirely. The expiratory sound, on the other hand, becomes altered at the same time, but in an opposite sense; so that if we represent its healthy condition by the figure 2, it will be found gradually to rise to 4, 6, 8, 10, and even 20, until at length it becomes blended and confounded with the bronchial *souffle*.

This is precisely one of the principal results which *Jackson* and *Andral* had announced, before the appearance of *M. Fournet's* researches. Still great praise is due to him for having prosecuted the subject much further than his predecessors, and for having laid down its details with greater accuracy and precision than had been done before.

Once in possession of this fact, a fact which is supposed to indicate the presence of tubercles in the pulmonary parenchyma at a period anterior to that at which ordinary observation can detect it, *M. Fournet* proceeds to point out some abnormal sounds which accompany these modifications of the double respiratory murmur in phthisis. The most important of these are two sounds which seem to have hitherto escaped the attention of auscultators, and which our author designates the dry cracking and the dashing or rumpling pulmonary sounds (*bruits de craquement et de froissement*.)

(We deem it however unnecessary to follow our author in his description of these auscultatory phenomena, which after all are probably only modifications of the bronchial or the cavernous respiratory sounds. But as we have not yet perused his work, for ourselves we cannot say more.)

On re-perusing some time ago the Lectures of *Dr. Latham* on Clinical Medicine—an admirable work of practical instruction on auscultation—we noted especially the following passages:—

"There may be, perhaps, now in the hospital a dozen patients who have cavernous respiration; and in each one of them the sound, besides being cavernous, has some distinct peculiarity; it is large, or it is small; it is a click, or a hum, or a squeak. It is like blowing into a bottle with a narrow neck, or into one with no neck at all; it is like the flapping of a valve; it is metallic; it is as if air was puffed into your ear, or as if air was drawn from it."

"The earliest and the least, but still a very authentic sign of vomica, derived

from auscultation, is a mere click or slight ringing sound, heard in breathing, at some point beneath the clavicle or about the scapula, in a patient in whom all the surrounding parts have been for some time dull. This click, to remove all doubt of its being owing to the accidental lodgement of a piece of tough phlegm in one of the bronchi, must always be found at the same point on several examinations of the chest. It is one modification of cavernous respiration. It results from a cavity or vomica in its first formation, when the tuberculous matter is softening and when it is just beginning to admit air."—*Rev.*)

The following remarks on the treatment of the early stage of phthisis are worthy the notice of every reader.

"In judging of the nature of this disease, we must ever bear in mind that there are two elements which are invariably present; the one being general or constitutional, and consisting in an alteration of the nutritive function in consequence of an unhealthy state of the circulating fluids, and the other being local and consisting in a morbid degeneration of the pulmonary parenchyma. In conducting the treatment, therefore, we must never lose sight of this two-fold view. On the one hand we must employ such dietetic and medical means as are calculated to give tone to the whole organism, and render the blood more rich in fibrine; and on the other hand we are to endeavour to arrest the local morbid action, which is almost always of a sthenic character, by the use of appropriate topical remedies. It is in the judicious combination of these two classes of remedies that we can hope to found any rational method of treating pulmonary consumption. By fortifying the general system by means of a generous but not a stimulating diet, moderate and regular exercise in the open air, various forms of baths, &c., while at the same time we keep up a derivative action over the local seat of the malady by issues, blisters and such like means, we may reasonably hope to arrest the evil in not a few cases, which if improperly treated will rapidly hurry on to a fatal termination."—*Bulletin de Therapeutique.*

APoplexy OF THE LUNGS, A FREQUENT CAUSE OF SUDDEN DEATH.

Taking the term *apoplexy* as designating an engorged or highly congested state of a part dependent on, or at least associated with, a partial paralysis of its nerves, it would indeed be rather surprising if the lungs were exempt from such a seizure.

..... "Why may we not presume that there may be a primary lesion of the functions of the pneumo-gastric nerves, inducing an extinction of the contractile and sensitive properties of the lungs, which will then become penetrated with serous or sanguineous fluid, just as the brain and its vascular apparatus are affected in similar circumstances: in truth, such cases are not unfrequent in old people, and in younger persons of a cachectic disposition. It is admitted by all that the encephalon is susceptible of a sudden compression, arising either from a mere turgescence of its vessels, or from a sanguineous effusion in consequence of the rupture of these vessels. In the same manner the substance of the lungs may become, as it were, inundated with an unusual quantity of blood, or this fluid may be extravasated from its vessels into the pulmonary tissue. Examples of both these conditions are not unfrequent in young persons who are of a vigorous and plethoric habit of body, especially after any violent exertion, as boxing, rowing, &c. Recovery from the former condition is not uncommon; the second form usually proves fatal.

Bartholin, in his *Tractatus de Pulmone*, states that, in many cases of sudden death, the cause is attributable to a sudden irruption of blood into the lungs, and a consequent stagnation of it in their soft texture.

The following remarkable instance is recorded by *Bonetus*, and entitled, *Suffocatio a crasso nigroque succo cordis sinus infarciente ac posteriores lobos pulmonum*.

Case.—A man, 50 years of age, and of a robust habit of body, was commencing his breakfast, when his breathing became suddenly oppressed, and he felt as if he should be suffocated. In spite of the efforts of his physician he died about noon, retaining his faculties to the very last.

The body quickly became enormously emphysematous, and of a dark livid colour all over.

On dissection, the abdominal viscera were found in a healthy condition, with the exception of their appearing of a livid hue from a highly gorged state of their vessels. The texture of the lungs, especially in the posterior part of the lobes, was indurated and as black as if it had been soaked in ink. There was no fluid in the pericardium: the right cavities of the heart contained a dark-coloured blood, of a thick consistence but without coagula.

Dionis has recorded an interesting case of a similar nature:—

Case 2.—On the 16th July, 1691, the Marquis de Louvois, having dined *en bonne compagnie*, went to the council chamber to read a letter to his majesty. While reading he was obliged to stop, and left the palace immediately for his own house. He requested *Dionis* to bleed him immediately, as he felt as if he should be suffocated. His anguish became, nevertheless, still more distressing; and he complained of a peculiar sensation in his belly, as if it would open. In half an hour from the moment of seizure, he was a corpse.

On dissection, the brain was found to be quite normal; the stomach was full of food; the lungs were swollen and distended with blood; the heart was flabby, and its texture was of a remarkably soft consistence; not a drop of blood was in any of its cavities.

Dionis very properly attributed the death to a stoppage of the circulation; the lungs were filled with blood because it was retained in their parenchyma, and yet there was none in the heart, because none could flow from the lungs into its cavities.

(Most of our readers will doubtless regard this case of sudden death as the result rather of a cardiac than of a pulmonic lesion. The heart, it seems, was in a state of extreme *ramollissement*).

Case 3.—A gentleman, 54 years of age and of a strong habit of body, became affected with deep melancholy, in consequence of a sudden reverse of fortune; he had never suffered from any pulmonary distress.

He became, however, soon after this time subject to dyspnoea, and a sense of suffocation. The attacks of these symptoms were only transitory and occasional. While playing with some friends at *piquet*, he experienced a peculiar distressing feeling in the epigastric region, which obliged him to walk about his room. On sitting down he immediately expired.

The body became quickly livid in different parts.

Dissection.—When an incision was made through the integuments of the throat, a quantity of blood flowed out; and, on pressing the abdomen, much frothy blood escaped from a wound in the trachea. On laying open this canal and the divisions of the bronchi, their lining mucous membrane was observed to be very highly injected. The pericardium was red and vascular on its inner surface, and contained a small portion of sanguinolent fluid. The aorta and pulmonary artery, as well as the entire surface of the heart, exhibited a deep red colour; the coronary veins were gorged with dark blood, but little was found within the auricles. The muscular tissue of the heart was much softened,

and partially converted into a fatty or adipose substance: at one point there was found a mass of adipocire.

MM. *Legallois* and *Thillaye*, who examined the body, were of opinion that the immediate cause of death in this case was the effusion of blood in the bronchi, which caused a sudden suffocation. The passive dilatation of the left ventricle, which no doubt must have caused death sooner or later, could only have contributed to the fatal issue as far as it determined or favoured such an effusion.

Case 4.—The Duc de Fleury, 53 years of age, and of a highly nervous temperament, was recovering very favorably from a fracture of the leg when one evening, after drinking some almond emulsion, he was most unexpectedly seized with a feeling of extreme exhaustion; in half an hour afterwards he was a corpse. The impression was that he had been poisoned.

With the exception of an engorged state of the veins of the dura mater, and two points of ossification in the folds of the falx, no morbid appearances were discovered in the *encephalon*.

The *lungs* were so completely infiltrated with blood as to resemble a sponge which had been immersed in it. The heart was quite empty. On the stomach, and at different points of the intestines, there were patches of ecchymosis pervading the entire thickness of their parietes. The spleen was very large, of a soft consistence, and contained a quantity of dark fetid blood. The whole of the abdominal venous system was gorged and highly congested.

The preceding cases are sufficient to prove that many cases of sudden death are attributable to apoplexy not of the brain, but of the respiratory organs.

Let us now briefly consider what are the *causes* of such a lesion?

It is well known that, in examining the bodies of animals which have died from tying the *nervi vagi*, the lungs are always found gorged with blood, and the bronchi are obstructed with a reddish coloured sanies.

Now, as the ligature of these nerves necessarily induces a paralysis of the larynx and of the lungs, it seems highly probable that sudden death, when dependent upon pulmonary apoplexy, is also attributable to the same condition.

..... "The lungs, losing their contractility and sensibility, become passive, and permit the blood sent to them from the heart—which suffers but little from the interrupted functions of the nerves which it receives from each recurrent—to penetrate their texture; the power of the right ventricle becomes feebler as the lungs are more and more distended, and congested with blood; the glottis allows only a small quantity of air to pass at each act of inspiration, and thus the dyspnoea increases more and more until life is at length extinguished. Under such circumstances, the right cavities of the heart are found almost always much distended, while the left cavities are quite empty."

We may therefore fairly infer that paralysis of the *nervi vagi* is one, and perhaps the most frequent, of the causes of pulmonary apoplexy. Another cause is probably an increased force of the right ventricle of the heart, whereby a larger quantity of blood is sent, and this, too, with such power upon the lungs, that their tissue becomes oppressed and ultimately engorged.

If, at the same time, there be any obstruction to the return of the blood in the pulmonary veins into the left auricle, this engorgement must necessarily increase, and at length be so great as to give rise to extensive extravasation into the air-cells.

..... "The signs of the two forms of pulmonary apoplexy, to which we have alluded—viz. that dependent upon a paralysis of the *nervi vagi*, and that arising from the excessive impulsion of the blood through the pulmonic

arteries—present certain differences which may serve to distinguish the one form of the disease from the other. The former is most frequent in advanced life, and at first is usually manifested by a sense of extreme weakness and of oppression; the patient grows pale, totters, and perhaps falls down. Nevertheless, he retains—and this circumstance alone is sufficient to shew that the attack is not of cerebral apoplexy—his intellect, and will tell the by-standers that all his distress is in the chest, and that unless relief is speedily given he must soon die. In perhaps a quarter or half an hour afterwards, a cold icy damp breaks out over all the surface, the pulse from being full and strong becomes rapidly weak and fluttering, and the mind begins to waver.

Most frequently the physician arrives only to witness the dying man, or perhaps his corpse; pronounces the case to be one of *apoplexie foudroyante*, and points to the brain as the seat of the attack.

But how very different is the course of cerebral apoplexy! In it the patient at once, and from the very first moment, loses his intellect as well as sensation and power of motion, and he falls into a state of complete stupor; there is usually some distortion of the mouth, and more or less difficulty of swallowing, and the breathing is almost always slow and stertorous: this state usually lasts from twelve to twenty-four hours, or longer. Surely such a case as this has but few features in common with those exhibited by a sudden lesion of the nervous functions of the lungs."

Independently of the symptoms during life, our author is of opinion that the appearances presented by the corpse, before any dissection takes place, indicate the seat of the mischief.

"The eyes are open and projecting, as we notice in drowned persons; a frothy sanguineous mucus oozes from the mouth in greater or less quantity, as the head is elevated or not; and *the body retains for an unusual length of time its heat*, more especially in the epigastric region. Percussion of the chest gives out almost always a dull sound, and this can be attributed only to some recent lesion of the lungs, since, during the continuance of good health, no complaint had been made of the breathing. These details have nothing in common with those observed in the bodies of those who have died from cerebral apoplexy."

The danger of pulmonary apoplexy, especially in old age, seems to be much greater than that of apoplexy of the brain; life is more quickly extinguished, and remedial measures are altogether more inefficacious. And, indeed, we cannot be surprised at this, when we consider that if there be any paralysis of the nerves of the lungs, those of the heart must necessarily suffer at the same time; whereas in cerebral lesions, the movements of the heart are but little affected, in consequence of its chief nervous supplies being derived from the intercostals.

The experiments of *Le Gallois* have proved that the functions of the lungs will continue, as long as the *nervi vagi* are uninjured. While this, therefore, is the case, the blood continues to be arterialised, and to make its impression on the brain, as long as this organ is susceptible of receiving and transmitting it. But if the lungs be paralysed, the arterialisation of the blood ceases, and consequently all impression on the brain is soon suspended, and the nervous energy exhausted.

Before closing these remarks, we shall briefly notice two cases, to shew what we consider *threatened attacks* of pulmonary apoplexy in young persons.

Case.—A young girl, after violent exertion, was seized with shivering and other symptoms of fever. The breathing became much hurried and very short, and the face was swollen and deeply flushed. The patient was excessively restless, and occasionally expectorated blood; she found relief only by sitting close to an open window: there was also intense headache, dilatation of the pupils,

obscurity of vision, short and rattling respiration, and the mouth was every now and then filled with a frothy sanguinolent saliva. The suffocation was imminent. The pulse was small, resisting and hard, (*serré*): but, after a copious venesection which was practised, it became soft and compressible. The dyspnoea and tendency to stupor were also at once relieved; some leeches were then applied on each side of the neck, and next day the patient was nearly well.

Case.—A lady who had during her three first pregnancies suffered much from headache, vertigo, pains and sense of heat in the chest, attended with expectoration of blood, became pregnant for the fourth time. Again the same train of symptoms made their appearance; she was bled ten times during her gestation, and all the period kept on a very light diet. By this treatment she went on to her full time, and she was safely delivered of a healthy child.

Dr. *Leveillé* embraces the substance of the preceding observations in the following three conclusions.

1. That apoplexy of the lungs has a perfect analogy with apoplexy of the brain.

2. That it (pulmonary apoplexy) almost always proves rapidly fatal, and generally more so than cerebral apoplexy.

3. That when death takes place in from a few minutes to one or two hours, the cause of it will be usually found in the chest and but seldom in the head.—*Revue Médicale.*

Note.—It is necessary to state that the memoir, from which the preceding observations are drawn, was read before the Institute of Paris so far back as the year 1815, and consequently before the development of the discoveries of recent pathologists on the influence of the diseases of the lungs, and more especially of the heart, in inducing sudden death. It is, however, not only interesting but really instructive occasionally to refer back to the opinions held by experienced physicians before the torch of auscultation was first applied by *Laennec* to illumine the obscurity which hung round thoracic pathology.

In perusing the preceding observations, the reader will probably remark that it is rather singular that the enlightened author should have so much overlooked the almost invariable coexistence of disease of the heart in cases of pulmonary apoplexy; although in almost every instance examined after death, this organ is described to have been flabby, attenuated, and loaded or even penetrated with fatty matter. The particulars indeed, as to the special lesion of its different cavities and their valves, are not given with sufficient minuteness to satisfy the modern pathologist; but we may fairly conclude that in the majority of the cases, at least in those which occurred in advanced life, the right ventricle was in a state of *ramollissement* and of dilatation. Now under such circumstances the impulsion of the blood along the pulmonary arteries is necessarily weak, irregular and uncertain; hence there arises a congested state of the extreme vessels in different parts of the lungs; and if at the same time there should appear to be any obstruction to the free return of the blood from the pulmonary veins into the left auricle, we cannot be surprised that the blood should escape, either by exsudation or by extravasation from rupture into the loose cellular substance, and also, into the air-cells of the lungs, and thus give rise to the disease which has been designated *pulmonary apoplexy*.

Such being the explanation of the mischief, we can at once understand *how* it proves so quickly and often so inevitably fatal.

Not a few cases of asthma, or rather of permanent dyspnoea, in old people, are attributable to this state of things. There is no paralysis of the pulmonary nerves, as imagined by Dr. *Leveillé*, and no primary disease of the lungs themselves, further than their capillary vessels being more or less congested and therefore weakened: it is not so much a *vital* as a *mechanical* lesion.

Such being the fact, the judicious practitioner will, in the treatment of a case of what he may deem to be one of pulmonary apoplexy, avoid any active or very officious treatment, as the powers of life are so languid that any further depression must endanger the feeble spark of life that remains. On the whole perhaps, the best practice will be found to be with the one hand to relieve the local congestion by the application of numerous leeches or of the cupping instruments to the chest or back, and with the other hand, and at the same time, to administer frequent doses of ammonia and such diffusible stimuli. Blood-letting from the arm is in many cases inadmissible, at least until some degree of reaction from the primary collapse has taken place: the quantity drawn must depend upon the effects produced upon the general circulation; hence the physician must watch these most attentively while the blood is flowing.

The auscultation of the heart will be found to afford a safer and surer test to guide our practice than the examination of the arterial pulse. The exhibition at the same time of small doses of stimulants, more especially of ammonia and æther, or of hot brandy and water, is not at all inconsistent with moderate depletion. For the powers of the system must be kept up to enable us with safety to relieve the engorged vessels; and the very nicety of the management of such cases consists in the contemporaneous use of stimulating and of depletory measures.

As a matter of course these remarks are applicable chiefly to those cases of pulmonary apoplexy which occur in old people, and are accompanied with, if not absolutely dependent on, a weakened state of the right cavities of the heart. That form of the disease which is apt to occur in young plethoric persons, especially during severe and protracted labour or suffering, as for example during accouchement, requires a much more vigorous and more decided lowering treatment; a large opening must be made in a vein, and the blood be allowed to flow freely and copiously; repeated doses of tartar emetic at the same time, so as to induce nausea, will likewise be most useful.—(Rev.)

M. PIORRY ON HÆMITIS.

The term *hæmite* has been given to that alteration of the blood which exists in inflammatory diseases, and which is characterised by the formation of the buffy coat on its surface when it has been drawn and allowed to rest. This condition of the blood has been recognised from the earliest period; but it has only been within the last few years that the constitutional disturbance occasioned by it, before any decided local inflammation has been set up, has been attended to as a special disease. The "inflammatory fever," and "Synocha," of older authors, the "Angeiotonic fever" of *Pinel*, and the "Rheumatic fever," of *Sarcone*, exhibit, it must be admitted, most of the symptoms which exist in genuine "hæmitis;" but the latter term is greatly preferable as being much more explicit, and as expressive of the pathological cause of the disease.

It is but fair to acknowledge that *Sydenham*, *Van Swieten*, *Boerhaave* and many other excellent physicians of the old school, seem to have been much better acquainted with this malady than the authors of more recent times: it is well known how constantly allusion is made in their writings to the over-plasticity of the blood causing obstructions in the smaller vessels, and thus giving rise to inflammation and its consequences—a doctrine which *Magendie* and some of the German writers of the present day have been endeavouring to re-establish.

After alluding to the influence of the size, depth, &c. of the vessel, into which the blood is received, on the production of the buffy coat—which, by the bye, has been much exaggerated by many—M. Piorry goes on to state:—"In 1826

I published an account of numerous experiments to prove that *the serum of the blood contains the materials of the buffy coat, and that this is formed by precipitation*. More recently it has been found by microscopical examination, that it (the buffy coat) is composed of colourless globules of an albuminous or fibrinous nature."

It has been objected to M. *Piorry's* views on hæmitis, that the blood is not 'an organ,' and cannot therefore be susceptible of inflammation; to this he replies, "Bordeu has triumphantly answered this objection. In treating of the medical analysis of the blood, which he calls fluid flesh (*chair coulante*) he views it as so completely a living organ that he rejects all the analyses of mere chemists, and asserts that it is a physician only that can examine the blood properly. And is it not the case that, in every inflamed part, we must take into account alike the fluids and the solids, in other words alike the blood-vessels and the blood itself?"

M. *Piorry* proceeds to describe the appearances exhibited by the blood, in cases of hæmitis, during coagulation:—

"The two elements of the blood separate, the coagulum falling to the bottom and the serum resting uppermost; in other cases this is reversed: the separation takes place usually eight or ten minutes after the blood has been drawn from the vein. The serosity is not at first clear and transparent, but it is of a greyish opaline or pearly white colour; sometimes it is yellowish. The surface of the coagulum is at first uniformly red, but this soon begins to exhibit a greyish stratum, which is gradually deposited more and more as the serum becomes clearer, and loses its opaque opaline appearance. The buffy coat is thus formed because the serum is uppermost and floats above the serum."..... "The buffy coat adheres to the coagulum; its thickness varies; its colour is yellowish, greyish, and sometimes has a slightly green hue; occasionally it is mixed with some blood globules. Its consistence varies exceedingly in different cases; it is always the greatest at the surface: the supernatant serum is generally clear, transparent, and of a citrine colour."..... "If we remove with a syphon the serum from inflamed blood, as it separates from the coagulum, and put it on a serous membrane or indeed upon a glass, a deposit similar to the *couenne* or buffy coat will be observed to take place. This deposit is sometimes in a mass; at other times it separates into two portions, of which one falls to the bottom and the other mounts to the surface. If it be exposed to the air, it reddens(?) and resembles a good deal the fibrine precipitated from the blood when this is briskly stirred about with a cane upon being drawn from a vein."..... "The examination of the buffy coat with the microscope and with chemical means has shewn that the plastic lymph is formed from the serosity of the blood, and is composed of globules."

Necroscopic appearances.—"Most of the physical appearances exhibited by the blood after death are the same as what we have mentioned are observed in it when drawn from the veins during life; this fluid is more or less extensively coagulated in the heart and blood-vessels. *Laennec, Legroux, and Bonilland* have described with much care the appearance of the coagula often found in the cavities of the heart and of the larger veins; occasionally too in one of the larger arteries. Another necroscopic sign of hæmitis is the occurrence of a layer of plastic lymph, very similar to the buffy coat of the blood, on the surface of some of the serous membranes, as the pleura, pericardium, peritoneum, and the synovial capsules. Sometimes also a blistered surface is found covered with a layer of dense coagulable lymph: and occasionally also we observe in the cellular tissue around any inflamed part a dense resisting layer of this lymph, which has been mistaken for a scirrhus formation.

Besides these signs, the lining membrane of the heart and blood-vessels often exhibits a most distinct vascular congestion."

Cause.—"In nine-tenths of the cases of hæmitis, the disease may be traced to the influence of cold, especially where the surface has been perspiring. Every one knows how almost invariably Pneumonitis, and Hæmoarthrits are attributable to this cause. Now let us remember that an inflamed state of the blood in a vast majority of cases precedes the invasion of the local symptoms, and is indicated by a feeling of general *malaise*, tendency to shivering, weariness and pains in the limbs and back, &c."

M. Piorry doubts that excesses in eating are apt, as supposed by many people, to induce hæmitis; they have a tendency, says he, to cause rather Polyhyperhæmia than hæmitis. Even the inordinate use of wine and spirituous drinks seldom seems to bring on this condition of the blood, unless the agency of cold be exerted on the body at the same time.

Disturbance of the respiratory function appears often to have a tendency to bring on an inflamed state of the circulating fluid; hence perhaps the frequency of fibrinous concretions in the heart in cases of Anhæmotosis.

Symptomatology.—It is difficult to describe the symptoms of hæmitis, apart from those of its complications—in other words, of the local inflammation which is almost invariably very quickly induced by it. One of its earliest symptoms is a shivering, which is generally more or less severe and lengthened in proportion as the disease is more or less decided; this is succeeded by a heat over the whole surface; the pulse becomes much quickened, the face is flushed, and the capillary vessels in every part seem to be highly injected. But it is unnecessary to pursue this part of the subject, as the description given by M. Piorry corresponds exactly with the symptoms of synocha or inflammatory fever of other authors. That he really regards these diseases as perfectly analogous is evident from what he says as to the rapid course of the slighter cases of hæmitis:

"If the hæmitis be slight, and if it will terminate favourably after a few days rest, a gentle diarrhoea comes, or the patient discharges a quantity of sedimentary urine, and the health is gradually restored:" and again, "at the commencement of all exanthematous fevers, during the whole period which precedes the appearance of the eruption, the symptoms of hæmitis are present, and yet there is no buffy state of the blood present."

Now for a few words as to the treatment recommended by M. Piorry in hæmitis. *Blood-letting* as a matter of course he enjoins. *Purgatives* he does not approve of; "they not only withdraw the serosity of the blood, but they irritate the intestine; a few glasses of Seidlitz water, or an enema occasionally are best." (How practical!) *Blisters* are decidedly useful, but not at the commencement of hæmitis; it is towards the close of the attack, and especially when there is Hydrohæmia or Anæmia that they are most beneficial. One of the most efficacious remedies in hæmitis is the copious use of *diluents*: "we can best diminish the plasticity of the blood, by making the patient drink very freely of any mild fluid; the blood becomes thus more and more diluted, and less disposed to coagulate."* To facilitate the absorption of the fluid into the blood, our author recommends at the same time the repeated administration of emollient enemata. (!) M. Piorry has no faith in any of the antiphlogistic remedies which have been supposed to counteract the over-plasticity of the blood:—"We have tried to prevent the formation of the *couenne* by the administration of

* M. Piorry remarks that if "we were to be guided by the results of mixing water with the serum of inflammatory blood out of the body, the employment of large quantities of diluents in hæmitis might be deemed any thing but prudent; for if we add pure water to the serum, there is a sudden coagulation induced. "But we must remember," he adds, "that diluents when swallowed reach the blood only after having been sufficiently elaborated."

the alkaline carbonates, the preparations of antimony, and various other chemical salts; none of these remedies has been of much advantage; we must receive with extreme reserve many of the statements of *Rasori* and his followers as to the efficacy of antimonials in the treatment of phlogistic diseases."—*Gazette des Medecins-Praticiens*.

Remarks.—Much of what *M. Piorry* has written on hæmitis, or the inflammatory condition of the blood, is strictly true; although unfortunately he has, like most authors on their peculiar or favourite subject, carried his ideas much beyond what is warranted by experience. That the blood is apt under certain circumstances, and more especially in certain habits of body, to acquire an abnormal degree of plasticity, or in other words to contain an unusual quantity of fibrinous or coagulable matter, cannot be disputed by any one: it is a fact of daily occurrence; and it is equally certain that this over-plastic state of the blood is a very general precursor of all decidedly inflammatory diseases. It is a common mistake to suppose that the invasion of these diseases is often quite sudden and is not preceded by any appreciable symptoms. We believe that in almost every case of decided phlegmasia the blood has been for several days, if not weeks, previous to the explosion (so to speak) of the local mischief, in a more or less altered state—a state corresponding with what *M. Piorry* has designated hæmitis. Many a severe attack might be, no doubt, prevented if this precursory state was detected sufficiently early, and means were used to impoverish and attenuate the state of the circulating fluids. We cannot indeed suppose that the blood can become so quickly charged with an excess of fibrine, as the suddenness of many an inflammatory attack may lead us to imagine: the train had been laid for some time before the explosion took place.

This inflammatory state of the blood is indicated by the following symptoms: general oppression and weariness after exertion and eating, occasional headache and dullness of the intellect, slight confusion of sight and perhaps tinnitus aurium, occasional nausea and sickness, scanty secretion of the urine which is almost always deep coloured and hot, flying pains in the joints and limbs, heavy and disturbed sleep, &c. Now this state of things may continue for weeks and even months before any local or well defined attack appear, and all the time the person may have been able to be going about and attending to his affairs, as usual. Suddenly, as is imagined, he is seized generally after exposure to damp and cold with shivering, followed by heat, and then the symptoms either of pneumonia, or acute rheumatism, pericarditis, &c. set in.

But if the truth were known, the attack has been by no means sudden; many a warning had been given to the patient that there was something not altogether right with him, and he in all probability had been trying to shake off his unpleasant symptoms not by lowering his diet, but rather by taking an additional quantity of stimulus in the form of wine, porter, &c. In this manner the hæmitic state of the circulating fluid gradually establishes itself, undiscovered alike by the patient, and probably also by his medical attendant. But we cannot at present extend these remarks. Suffice it therefore to say, that although we cannot agree with *M. Piorry* that every case of synocha is dependent upon hæmitis, we very willingly admit the practical value to be derived from a greater attention to the state of the blood as the groundwork or precursory stage of many inflammatory diseases; more especially of acute rheumatism, pneumonia, and pericarditis.

The first of these diseases—acute general rheumatism or rheumatic fever, as it is often called—is perhaps of all the one which is most essentially connected with that state of blood in which there is a great excess of the fibrinous portion; and it is more than probable that it is from this circumstance that we are to account for the very intimate dependence of pericarditis and many lesions of the heart and great blood-vessels on previous attacks of acute rheumatism. We

thus more and more distinctly perceive the high importance of paying extreme attention to the cardiac symptoms during and after (not for weeks only but for months and years) an attack of severe rheumatism.

One word before we close, as to the treatment of *hæmitis*; for it is in this branch of his theme that the observations of M. *Piorry*, as indeed is the case with most of the medical writings of his countrymen, are most faulty. For example, he does not even once allude to the undisputed effects of mercury upon the over-fibrinous state of the blood; and yet we believe that most English practitioners would rather dispense with the lancet itself than with this most potent remedy in the treatment of *hæmitis*. Iodine and its preparations exert a similar effect. How far colchicum has any direct influence on the condition of the blood, we cannot say; but it seems probable that it has.

Once more, we strongly urge upon our readers' attention the importance of keeping an eye for a length of time upon such of their patients as have suffered from those inflammatory diseases in which the blood has been highly charged with fibrine; as the foundation of many organic diseases, especially in the thoracic viscera, is often imperceptibly laid during the following six or twelve months.—*Rev.*

CASE OF PUZZLING ABDOMINAL TUMOUR, WITH REMARKS.

The following case, which puzzled many of the leading men in Paris, is worthy of record, as a fair instance of the difficulty of forming a correct diagnosis in certain cases of abdominal enlargement in females. As the patient, a girl, ultimately recovered, it is still a matter of doubt what her disease really was. By some the swelling was attributed to *pregnancy*, by others (M. *Roux*) to *extra-uterine pregnancy*, by M. *Blandin* to an *encysted tumour of the ovary*, by M. *Montain* to the *presence of a dead and decomposed fetus*, by M. *Recamier* to an *accumulation of feculent matters in the colon*, by M. *Jobert* to an *extravasation of blood in the omentum or mesentery*, and lastly, by others to an *accumulation of blood in the cavity of the uterus*.

Let us now mark the particulars as related by M. *Boinet*, who seems to have watched the case during the whole of its lengthened duration.

In 1836, the patient, 16 years of age, was admitted into the *Hôtel Dieu* for retention of urine, accompanied with considerable tumefaction of the abdomen. The catamenia had appeared when she was only twelve years old, but they had been irregular in their re-appearance; and during the intervals there was a copious leucorrhœa. Her health had however continued very good till about a twelvemonth ago, when she began to suffer every now and then from nausea, indigestion, and palpitations of the heart. At this time she was admitted into the *Hospital Beaujon*, where she remained for ten months for a *pretended* chronic gastritis: the catamenia were absent for five months at a time. She complained of a dull and deep-seated pain on the left side of the abdomen—for several days it was sharp and darting; then it would subside; and again return. It was increased on pressure; and the abdomen began to be much more swollen and hard than it had ever been before. For two months she was affected with a diarrhœa, which resisted the effects of every remedy. When this ceased, it was replaced by a retention of urine of a rather singular character. In a bath she could pass urine freely; but out of it not a drop would come except with the catheter. She was bled from the arm and with leeches, blistered, cupped, took steel, quinine, and various other remedies; but nothing that was tried seemed to have any effect in diminishing the enlargement of the abdomen and the uneasy tenderness on its left side.

She left the hospital and entered the *Hôtel Dieu*.

No. LXVI.

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At this period her general health seemed to be perfectly good, if we might judge from the freshness of her complexion, and the plumpness of her whole body. Her appetite was regular and good, and her bowels acted daily. The action of the heart was strong and rather tumultuous; but, as her temperament was highly nervous and impressionable, the palpitations to which she was frequently subject, especially after any exertion, such as going up stairs or walking quickly, were deemed to be hysterical. To void urine she was still obliged to use a catheter, except when she was in a bath; then she was always able to pass it without difficulty.

The abdomen was excessively tumefied over its whole extent, so much so that it gave the spectator the idea of pregnancy at its full term. It was not painful, except when pressure was made between the pubes and umbilicus—but firm and resisting, although no traces of a distinct tumor could be felt anywhere.

On percussion, the right side of the abdomen was remarkably resonant, whereas the left, at least over the iliac region, was dull. Auscultation afforded no signs of any import.

The mammae were small as in a virgin, and not at all painful: neither was there any discolouration of the areolæ.*

Examination per rectum and per vaginam, as well as of the bladder with the catheter, afforded no signs of the existence of any tumor in the pelvis.

As she suffered much from headache, and the catamenia were still absent, she was bled from the arm, and also from the feet, and had leeches on the thighs and on the pudenda. Various emmenagogues were also given, but without producing the desired effect.

M. *Blandin*, under whose care she was, and who was inclined to regard the case as one of encysted tumor, (probably ovarian,) requested the advice of several of his colleagues.

M. *Roux* thought it probable that there was extra-uterine pregnancy; and M. *Recamier*, that all the symptoms were probably attributable to an accumulation of feces in the sigmoid flexure of the colon.

Acting upon this idea, M. *Blandin* put his patient upon a course of purgative medicines, and of cold bathing. But under this treatment the abdominal fullness increased rather than diminished, and the tenderness in the left flank became greater than it had been for some time.

From the Hôtel Dieu, she passed into the Hospital St. Louis, and put herself under the care of M. *Jobert*: she still retained all the appearance of plump health; but there was no change in the size of the abdomen, and the dysuria was as distressing as ever. While in the hospital, the girl said that she was sensible of water being in her abdomen; and although no fluctuation could be perceived by tapping with the fingers, a sound as if of a wave of fluid was heard, when the body was shaken briskly from side to side. The fluid seemed to be contained within a limited space; and this was exactly in the left iliac region, where percussion elicited a dull sound and a sense of pain and uneasiness was experienced on firm pressure. Still no distinct or circumscribed tumor was perceptible here or elsewhere, although the left side of the abdomen was now sensibly more distended than the right: the general health continued to be ex-

* Not satisfied with these and other signs sufficiently negative of pregnancy, the French physicians, with that disregard of delicacy which we fear is but too common on the continent, proceeded to examine, with all possible minuteness, the organs of generation, although the girl assured them of her chastity; and there is given a very particular account of their appearance, which we, however, have no intention of transcribing. Suffice it to say that every thing indicated that she was *une jeune fille sage*.

cellent. The girl had been taking the ergot of rye and steel pills for some time, when diarrhoea came on, and the catamenia made their appearance for a few days. This had the effect of diminishing somewhat the abdominal fullness: the excretion of the urine was, however, still as difficult as ever, and could be effected only while the patient was in a bath, unless a catheter was used.

Next month menstruation returned, although still scantily: the abdomen was becoming gradually somewhat smaller; the other symptoms were as before.

At the following period, the catamenia were much more abundant; the abdomen became now more tender, and sharp darting pains were experienced through it ever since the menses made their appearance; it was sonorous on percussion everywhere except in the left iliac region.

From this period menstruation was regular, the swelling became gradually less and less, and the tenderness on the left side diminished at the same time, so that at length the abdomen acquired its normal dimension, and no inconvenience remained, except a slight uneasiness over the former seat of suffering when firm pressure was made upon it.

The retention of urine continued for a considerable period; but this symptom also at last ceased spontaneously.

Just before each menstrual period, the patient continued to experience a rather sharp pain in the left groin; but this ceased when the catamenia made their appearance.

Such is the history of this very curious and instructive case. It is still a problem what its real nature was and to what cause the abdominal swelling was attributable.

The most probable conjecture seems to us to be, that there was a serous cyst connected with the left ovary, or with the left Fallopian tube, and that the contents of it were either absorbed or were discharged, perhaps, by the bowels.*

The following case gives some grounds of probability for this opinion.

Case.—A lady, 28 years of age, was excessively chagrined and desponding

* It will be observed, that one among the many conflicting opinions on this case was, that there was a retention of the catamenia in the cavity of the uterus. That such, however, was not the case, was at once decided by introducing a probe or catheter into the cavity of the uterus to the extent of an inch and a half—a *simple and conclusive test of the existence, or not, of foreign matters within the uterus.*

As to the idea that there was a genuine encysted dropsy of the ovarium, Dr. *Boinet* remarks:—

"When encysted dropsy is so far advanced as to cause a regular, uniform, and symmetrical tumefaction of the abdomen, there usually exist symptoms—such as the sense of fluctuation, functional disturbance of the viscera, distress in breathing, œdema of the lower extremities, development of the sub-cutaneous abdominal veins, &c.—which were not present in our patient.

The examination *per vaginam*, also, was far from confirming the idea that there was a dropsical enlargement of the ovarium; for, when this is the case, we usually find that the position of the uterus is more or less deranged, the fundus being drawn over to one side by the tumor, and its mouth and neck being inclined over to the opposite side; hence, the edges of the *os tincæ*, instead of being parallel, as in health, to the sacro-ischiatic symphyses, become the one superior and the other inferior, so that one of the surfaces corresponds with the sacro-vertebral symphysis, and the other with the anterior parietes of the hypogastrium."

after the sudden death of her first and only child. Although her health suffered a good deal in consequence, the catamenia returned regularly. On one occasion they ceased for a week or so, and, as her great desire was to have a family, she fondly hoped that she might be pregnant. But such was not the case; and, after the lapse of several months, she became more depressed than ever. About this time she began to experience a pain in the left side of the abdomen between the false ribs and the spine of the os ilii, and in this place a circumscribed fullness or tumor was distinctly perceptible: it was of a globular shape, not adherent to the abdominal parietes, moveable to a certain extent, and seemingly deep-seated, and of about the size of two fists joined together. What was the nature of this tumor? It might be an extra-uterine conception, or an encysted or hydatidic tumor of the ovary, or an accumulation of hardened feces.

After the lapse of a month, all uncertainty was dissipated by the discharge of numerous hydatids with the stools, and the almost complete subsidence of the tumor. The lady became subsequently pregnant and gave birth to a child.
—*Gazette Medicale*

M. ANDRAL ON THE VALUE OF CHEMICAL AND PHYSIOLOGICAL EXPERIMENTS.

..... "The more complex that the composition of any animal fluid is, the more uncertain are the results of its analysis.

Take, for example, the blood: what do we really know about it? Little more, indeed, than that it is a fluid which holds in suspension numerous globules of a determinate size, shape, and colour.

So difficult, indeed, is the chemical examination of organic substances, that we are continually finding chemists of the highest talents attributing to some of the fluids principles which are solely and altogether the result of their experiments in the laboratory. For example, *Tiedeman* and *Gmelin*, so celebrated for their analyses in organic chemistry, have admitted into the composition of the bile substances or principles which *Dumas* subsequently has most distinctly shewn to be generated during the analytic operations to which they have been subjected.

Again, it is so difficult to reproduce phenomena altogether as Nature has exhibited them, that often the substance which seems alike to our senses and our tests similar to another is, in reality, of a very different nature. Thus the (alleged) colouring matter of the blood, *hæmatoxine*, separated by chemical means does indeed exhibit characters which have led the most distinguished chemists to believe that it is to its presence that the peculiar colour of this vital fluid is owing;—and yet it does not redden on exposure to the air, or even to pure oxygen. It cannot, therefore, be quite the same substance as that which exists combined with the other elements of the blood We cannot, indeed, wonder much at the imperfection of organic chemistry, seeing that it is only by analysis that we can discover the nature or composition of organised substances; almost all attempts at the synthetic test having failed."

So much for the uncertainties of the results of chemistry applied to the discovery of organic bodies and of organic operations.

M. Andral proceeds next to point out the extreme difficulty of drawing accurate conclusions in physiology from experiments on living animals.

"In physiology," says he, "the difficulties increase; another element, which we have not to guard against in animal chemistry, arises here; the chemist has to do only with dead matter, whereas in this new department of natural science

the body is still under the influence of the vital power. All the phenomena of a living animal body—at least among the higher classes of the scale—are so linked together, that you cannot touch one without making the others more or less suffer and sympathise. Do you try an experiment to detect a phenomenon which is carried on *au sein* of a living body? All the great functions are at once deranged in their mode of manifestation; more or less blood is lost; it no longer follows in the vessels its regular and normal course, and it becomes either quickened or retarded in consequence of pain and fright; the secretions are immediately altered; at the part where the incision is made, there is an afflux of the fluids and of sensibility; and that great vital property, excitability, is at once brought into play; in short, you induce a state of active hyperæmia, or inflammation.

Wherever you touch a living animal being, it is the nervous system which responds by disordered movements, and by alterations in the sensibility, and which thus at once disarranges the phenomena which you wish to produce. Hence the phenomenon, which you represent as isolated, is not in fact so; and for this reason, that no point can be touched without causing a greater or less amount of disturbance of the entire organism.

..... It is not, however, to be denied that, in certain cases, experimentation has thrown considerable light upon some points of physiology, and also of pathology. Thus, for example, the experiments on the Fifth pair of cerebral nerves have afforded the point 'de depart' of our knowledge of the morbid lesions of these nerves; we could not have known any thing on this subject, unless we had the data which experiments have supplied us with. It is by them also that the special functions of the Portio Dura have been discovered, and that certain pathological facts connected with these functions have been understood and explained. In other cases, experiments on animals have been found to induce a train of morbid phenomena which are indisputably analogous with those which occur during certain diseases. Thus the injection of pus into the veins of animals has been observed to give rise to symptoms and appearances, which bear a striking resemblance with those exhibited in cases where a lesion of the blood has taken place spontaneously, as in scurvy, certain cases of typhus, the absorption of purulent matter, &c. Again, by experimenting we are enabled to study a certain number of the causes of diseases, as, for example, all the class of intoxications or poisonings—including under this term the introduction into the circulation not only of the common poisons from the mineral and vegetable kingdom, but also of miasms and of the various kinds of animal virus.

..... We find also, that by modifying the relative proportion of the constituents of the blood, various morbid states, which have their analogues in disease, may be induced. Thus, by withdrawing a certain quantity of the fibrine of the blood, we promote the effusion into various tissues; whereas by increasing its viscosity, a series of phenomena of an altogether different character is induced; as has been distinctly proved by the recent experiments of *Majendie*.

..... There is, therefore, a certain number of pathological lesions which may be explained by the results of direct experimentation.

We can excite inflammation and suppuration; but we cannot induce the formation of false membranes, of tubercles, of cancer, of hydatids, &c. Some specific cause or action is necessary to give rise to such morbid productions.

Assiduous attention, however, to various circumstances which are daily presented to our view, will probably enable us at length to advance in this obscure department of pathology. Already we know that the generation of hydatids in sheep is certainly promoted by feeding on wet pasturage.".....

With the following brief remarks on certain necroscopic fallacies, we shall close our extracts from M. *Andral's* lectures for the present.

..... "During hot weather, we not unfrequently observe on the lining membrane of the heart and great bloodvessels a well-marked redness, and the appearance of high vascular injection, which is the result not of an inflammatory action, as has been too often supposed, but altogether of the changes in the fluids and solids produced by incipient putrefaction. There are not a few pathological works which, I venture to say, are 'frappés de nullité,' from authors not being aware of this and such-like occurrences.

For example; it is generally admitted that, under the influence of malignant fever, the tissue of the spleen is usually more or less extensively altered. Now, the late M. *Bailly*, of Blois, whose premature loss to medical science every one must regret, has, it is well known, published some valuable works on malignant intermittent fever; and in these he has particularly dwelt upon the remarkable changes in the spleen; such, for example, as the soft diffident disorganization of its tissue. But in all his observations no mention is ever made either of the lapse of time after death when the dissection took place, or of the heat of the weather at the time. Now, this very state of the spleen is found in every body, if the examination does not take place, during Summer, within thirty hours after decease. We cannot, therefore, rigorously adopt the statements of M. *Bailly*, as we are ignorant of the circumstances in almost every case which he has reported."—*Gazette des Medecins*.

NEW SORT OF MEDICAL PUFFING.

We are at present in quite a *puffing** epidemic. Here is an ingenious one.

Suppose that you visit Egypt, and there see a little negro rascal, whom his owner is willing to sell for a bottle of champagne. On your arrival in Paris, a short note makes its appearance in the corner of some journal, that a celebrated physician has recently brought over an interesting Ethiopian boy, whom he is educating at his own expense! A year afterwards, you convert him to Catholicism—a task which must indeed be very difficult;—a second puff for the christening!! Next year, he takes the sacrament for the first time: a third puff for this!!! Not long afterwards he marries; a fourth puff for the marriage!!!!

Now all this is very amusing, and withal very innocent; and the best part of the joke is that it may not be altogether unprofitable.—*Ibid*.

SULPHATE OF QUININE IN ENLARGEMENT OF THE SPLEEN, AND IN DROPSIES AFTER AGUES.

Dr. *Levy*, physician of the Military Hospital of Val-de-Grace at Paris, has very satisfactorily shewn that the dropsical effusions, which not unfrequently supervene upon long neglected agues, are most successfully treated with quinine. He alludes to the researches of MM. *Bally*, *Nonat*, *Piorry*, and other contemporaneous physicians, which have clearly established the superior efficacy of this remedy—to be associated in most cases with the application of the cupping

* The French seem pleased with this word, for which, we suppose, they have no exact synonym, and which they have therefore adopted into their own 'belle langue.'

instruments over the left hypochondrium—in dispersing the enlargements of the spleen which so very generally, nay almost always, accompany old intermittent fevers. Indeed, he regards this, the administration of quinine in such cases, as one of the most valuable therapeutic discoveries of recent times. Now, as the dropsical effusions are almost invariably connected with an *infarcted*—to use an old word—state of the spleen, it is a rational deduction to anticipate that the remedy, which is so decidedly efficacious against the *cause*, may not be without its influence upon the *effect*. Certain it is that the use of the ordinarily-resorted-to means, such as diuretics and purgatives, seldom succeeds in dissipating the dropsies which we are at present considering, whereas they may be often dispersed by quinine in full doses.—*Gazette Medicale*.

ON THE REMEDIAL POWER OF THE LACTATE OF IRON.

This new preparation of steel has already been extensively tried by some of the leading hospital physicians in Paris, and has met with their unqualified approbation.

The following extracts from a memoir by MM. *Gelis* and *Conlé* will be sufficient to introduce it to the notice of the English reader.

“Several reasons have induced us to select the combination of the protoxide with the lactic acid: this acid is widely diffused through the economy; there is, perhaps, not one part of the body which does not contain a notable quantity of it. *Berzelius* has detected it in muscle, in milk, and in all the secretions; the perspirable matter owes its acidity to its presence, and a considerable quantity is found in the urine. The solvent power of the gastric juice is perhaps mainly attributable to the presence of the lactic acid: the traces of the hydrochloric are, it is now generally admitted, very feeble.

It must, therefore, be the lactate that is formed in the stomach, when any steel medicine is swallowed.

It is easily prepared by treating iron filings with diluted lactic acid. The water is decomposed, hydrogen is evolved, and the oxygen combines with the iron. When the evolution of the gas ceases, the solution is filtered and then evaporated until a pellicle forms on the surface: the salt chrySTALLISES on cooling.

The lactate is not very soluble in water, and a high heat decomposes it. It is not readily affected by exposure to the air.

It may be administered in the form of pastilles, drops, or lozenges: the sugar which enters into the composition of these prevents the further oxydation of the salt. The dose is from four to fifteen grains.

The authors adduce several cases of chlorosis and other states of the system which are usually relieved by steel medicines, drawn from the practice of MM. *Bouillaud*, *Rayer*, *Beau*, &c. in which the lactate was administered with excellent effects: in some it succeeded after the usual ferruginous preparations had been fairly used without benefit.

M. *Bouillaud* has reported most favourably of this new medicine to the Academy: he has used it in 21 cases, and in all it produced excellent effects. It seems to have a marked influence in increasing the appetite. The dose was from six to 15 pastilles (five centigrammes in each: perhaps each patient took eight or ten grammes in all.

Professor *Fouquier* confirmed the favourable report communicated by M. *Bouillaud*. He stated, as his opinion, that the lactate would become one of the most valuable and standard ferruginous preparations used in medicine.

ON THE FREQUENCY OF THE PULSE IN NEW-BORN INFANTS.

"We are astonished, upon examining the statements of *Billard* on this subject, to remark the very striking difference which he found in the frequency of the pulse in different infants of the same age, and in equally good health. Can we, for example, well admit that there should ever be a difference of 100 beats in the course of a minute? And yet this conclusion is deducible from the researches of this author.

In a recent work of *M. Jacquemier*, it is stated that the minimum of frequency of the pulse in new-born infants is about 97, and the maximum about 156. *Haller* fixed it at 140, and *Samiering* at 130. Every physician is well aware how easily the pulse of infants is rapidly quickened by their restlessness, during crying, and so forth; and that the only accurate way to determine it is to feel it during sleep. During the act of sucking, the breathing is hurried, and the circulation is therefore necessarily quickened at the same time. *M. Valleix*, who seems to have used the greatest precautions to avoid all sources of mistake, states as the results of his examinations, that in infants from 2 to 20 days old the minimum of frequency is about 76, and the maximum about 104. We may therefore consider the medium 87 as the expression of the average frequency of the pulse at this period of life.

It has been generally alleged that the frequency of the pulse diminishes as the age of the infant advances. The very reverse seems however to be the case, according to the experience of this author; for he found that at seven months, the pulse is much more frequent than during the first week after birth, and that from that period—seven months—it progressively diminishes in rapidity to about the sixth year or so.—*Clinique des Maladies des Nouveau Nes, par F. Valleix, 1839.*

 PROFESSOR AMMON ON THE TREATMENT OF IRITIS.

In addition to vigorous antiphlogistic remedies, the "Archiatre" of the King of Saxony, in his recently published *Commentatio de Iritide*, recommends the local use of belladonna in fomentations or in the way of friction on the temples and eyelids, and the internal administration of one or more of the following remedies—conium, arnica, colchicum, sarsaparilla, tartrate of antimony, red sulphuret of antimony, calomel, corrosive sublimate, the red precipitate of mercury, the muriate of barytes, turpentine, cod-liver oil, hydriodate of potash, &c., according to the severity of the disease and the constitution of the patient. If the constitution be scrofulous, he thinks highly of the muriate of barytes; if tainted with syphilis, provided it has not already been injured by mercurial indication, he prefers the corrosive sublimate; and if decidedly rheumatic he strongly recommends the tartrate of antimony in the dose of two or three grains daily; he mentions also colchicum as occasionally useful under such circumstances.

The author describes with great minuteness a variety of iritis which he denominates "seroso-cachectic," from its occurring in persons whose constitutions are unhealthy and cachectic.

"It is characterised by an obscurity of the cornea, loss of colour in the iris, and the accumulation of a white substance in the anterior chamber; the posterior surface of the cornea resembles an ulcer, its obscured centre projects out, and the conjunctiva becomes injected and swollen around the cornea.

The disease lasts for months or even for years. If the cornea regains its transparency, we find the iris colourless, and the pupil motionless: the vision is impaired or entirely lost from the beginning of the disease, and there is great sensitiveness to the light, and frequent supra-orbital pains. The treatment is

generally difficult, and to be successful must always be to a great extent constitutional; saline baths, sarsaparilla, arnica, senega, and especially the hydriodate of potash or of soda are the best remedies."

What he says as to the management of syphilitic iritis may be comprised in a few words. If the patient has taken little or no mercury, the disease will be almost infallibly arrested by the judicious employment of calomel or of the corrosive sublimate; but if he has already taken a good deal, the preparations of this active mineral will be found to exasperate the mischief; in the latter case the *hepar sulphuris*, the hydriodate and carbonate of soda or of potash, sarsaparilla, and the extract of chelidonium should be resorted to. When syphilitic iritis occurs in a person of a scrofulous constitution, mercurials should be employed with great caution; hemlock, senega, sarsaparilla, and cherry-laurel water are often very beneficial.

According to the experience of Professor Ammon, one of the most intractable forms of iritis is that which sometimes follows the sudden retrocession of tinea in a scrofulous patient: the iris readily becomes atrophied, blood is effused into the anterior chamber, the inflammation spreads to the choroid coat, the ciliary processes and the capsule of the lens, and blindness is ultimately induced by a glaucoma or atrophy of the eye being induced. In such a case antimonials and mercurials are hurtful; the most useful remedies are barytes, conium, iodine, &c. and the use of local blood-lettings and of revulsive applications.

When iritis occurs in arthritic patients and in women whose health has become cachectic at the change of life, Professor Ammon recommends the administration of the decoction of Zittman, the carbonate of soda along with the extract of taraxicum; and if the constitution be decidedly rheumatic, the use of turpentine, of colchicum, and occasionally also of quinine.—*Schmidt's Jahrbucher*.

ON INCONTINENCE AND RETENTION OF URINE IN OLD MEN.

The object of a memoir, which was recently read before the Academy of Sciences on this very troublesome affection of old age by Doctor Mercier, is to shew that it is in almost every case attributable to an enlargement of some portion of the prostate gland, and that it is very rarely or never dependent upon a partial paralysis of the bladder, as is generally believed, unless indeed there be paraplegia at the same time.

The author explains in the following extract the mode in which this enlargement acts in inducing incontinence.

..... "The neck of the bladder is not closed so much by a contraction of every point of its circumference, as by the apposition and coaptation of the two lateral halves of the prostate; thus it represents a fissure directed from before backwards.

By the antero-posterior hypertrophy of these lateral lobes, this fissure increases in length; but as long as its edges remain in complete approximation, the urine will be retained as in health; so that the gland may be very considerably enlarged without any notable disturbance in the excretion of urine.

But let us suppose that the edges are slightly separated from each other at one point; the result of this will be that the urine will escape; and if the separation be permanent and considerable, then there will be a complete incontinence. This is precisely what takes place in a multitude of cases."

He next alludes to the effect of enlargement of the third lobe of the prostate.

..... "Suppose that any substance is interposed between the edges of the neck of the bladder at its posterior extremity, so as to keep them apart, then instead of a fissure we shall have a triangular-shaped opening, the apex of which will be directed forwards, and through which the urine will escape the

more easily, as the separation of the lateral edges is the more considerable, and as their approximation is less perfect. Now this is the effect of hypertrophy of the third or middle lobe of the prostate; and it is this very condition of the parts which is by far the most frequent cause of incontinence of urine in old men.

This portion of the gland, which in the healthy state is so small that it can be scarcely demonstrated, often acquires a great enlargement in old age; and as this enlargement takes place in the transverse direction, the lateral lobes become more and more separated from each other. Whatever be its form, if it do not cover the orifice of the urethra like a valve, it induces a disposition to incontinence, which will be the more or less decided, according to the degree of separation of the lateral lobes and the density of the hypertrophied tissue; for if the tissue be soft, it will more readily yield to the muscular powers which compress it."

The author proceeds to shew that retention as well as incontinence of urine may be caused by the hypertrophy either of the transverse or of the lateral portions of the prostate. The following explanation of the mechanism in which the hypertrophy of the middle lobe gives rise to retention is ingenious:

..... "We have already seen that by increasing from one side to the other, the middle portion of the prostate has the effect of separating the lateral lobes, and consequently gives to the vesical orifice a triangular form which permits the urine to escape involuntarily. At the same time however it increases in other directions, chiefly forwards, where it forms a sort of valve transversely stretched above the posterior part of the neck. The more that this valve increases, the more are the lateral lobes separated posteriorly, and the more does the base of the triangle approach its apex. At length a time comes when they come in contact, and when the vesical orifice, instead of being an antero-posterior fissure as it is in health, becomes a curved or an almost straight opening from side to side. Then the valve on the posterior half of the cervix is in apposition with the anterior half, the orifice of the urethra is closed, and a retention of urine succeeds to a state of mere incontinence. Now such cases are of very frequent occurrence; and too often they are imagined to depend upon a paralysis of the bladder, their true cause being not even suspected."

An unequal enlargement of the lateral lobes of the prostate is apt to induce a certain degree of twisting or curvature of the urethral orifice to one side, and thus to give rise to a greater or less amount of dysuria: the introduction of the catheter under such circumstances is usually obstructed, and requires some tact on the part of the surgeon.

Dr. *Merceir*, although convinced that essential or idiopathic paralysis of the bladder is exceedingly rare, even in old age, admits that chronic inflammation of its mucous coat is apt to be followed by an impairment of the contractility of its muscular tunic.

Now as this state is very often co-existent with enlargement of the prostate, the dysuria under such circumstances must be necessarily aggravated.

Dr. M. quotes the following passage from *Sir A. Cooper's Lectures on the Principles and Practice of Surgery*, 1835, p. 482, to shew how mistaken some of the most eminent surgeons are as to the true pathology of retention and incontinence of urine:..... "retention of urine, when it is incomplete, must be considered as salutary, since it prevents incontinence which would otherwise constantly take place in old men."

"Now I ask," says Dr. *Mercier* "would Sir A. Cooper have held this language, had he been aware that these two affections, so different, are owing to the same cause? *When an old man has difficulty in retaining his urine, and finds himself obliged to let it escape on the very first call, we have strong reason to fear that sooner or later he will have retention till at length he is quite unable to void it.*"

The following four propositions embody the substance of our author's inge-

nious observations on these very common and very distressing maladies of old age.

1. Except where there is a disease of the brain or of the spinal marrow, or a general prostration of the entire system, incontinence and retention of urine in old men depend almost exclusively on an hypertrophied state of the prostate: it is for this reason that the one affection so often succeeds the other.

2. The more that this hypertrophy affects the gland in an equal and regular manner in all its parts, the greater will be the disposition to incontinence.

3. On the contrary, the more partial and irregular the hypertrophy is, the more imminent will be retention.*

4. It is in cases which are intermediate between the two categories now mentioned that the state of overflowing (regorgement) of the urine is most apt to take place.—*Gazette Medicale.*

PROLAPSUS RECTI CURED BY A NEW (?) OPERATION.

A woman, 33 years of age, had the misfortune to become affected during her third pregnancy with a prolapsus of the rectum, which was however only temporary, and did not occasion a great deal of distress. During her next pregnancy the prolapsus became much more considerable and was permanent; moreover it was accompanied with a descent of the uterus, and with a great relaxation of the abdominal parietes.

M. Roux excised a ring or circular portion of the mucous membrane of the prolapsed gut: this operation afforded relief for some time; but the prolapsus again began to increase, the discharge of the alvine contents became involuntary, and such severe pains were felt in the loins and thighs, that the patient was obliged to keep her bed. In this state she was admitted into the Hôpital de la Pitié under the care of M. Robert. The sphincter was found to be so much relaxed that four fingers might readily be passed into the gut.

It was proposed to excise a portion of the sphincter proportioned to the amount of relaxation; but before proceeding to the operation the patient was put upon a very restricted diet, and opium was given to ensure a prolonged constipation of the bowels. This being effected, M. Robert made an incision on each side of the anus, the two converging to the point of the coccyx. The flap of integuments between the two incisions, comprising a portion of the sphincter muscle also, was detached, and the edges of the wound were then brought and kept in apposition by three points of the twisted suture.

On the sixth day after the operation the sutures being removed, the wound was found to be nearly united. On the fifteenth day no alvine evacuation had as yet taken place; but as the desire to relieve the bowels was very distressing, the fæces were removed with a scoop.

On the fortieth day the patient, who before the operation could not retain at all the contents of the bowels, kept an enema an entire day: there was no longer any prolapsus; the anal orifice had recovered its normal dimensions, and did not admit readily more than one finger, and the patient was able to relieve the bowels at will and without distress.—*Gazette Medicale.*

* This opinion is adopted by M. Leroy d'Etiolles in a memoir which he recently submitted to the Academy, and wherein he says:—"In all these patients the complete or incomplete retention proceeded from a partial tumefaction of the prostate. The uniform swelling of this gland, without retention of urine, existed in three patients."

A NOVEL MONSTROSITY—PORTION OF A FŒTUS DEVELOPED AT THE EXPENSE OF THE TESTICLE.

The following case is certainly one of the most extraordinary in the records of surgery, and cannot, as far as we know, be exactly paralleled. What are we to think of a portion of a fœtus being fixed in the testicle of a man, where it seems to have been developed since the period of birth! The truth of such a statement might indeed have been fairly questioned, had the case not been examined by dozens of medical men, and if there was not the *material* proof in the preparation which has been laid before the Academy of Sciences.

A man, 27 years of age, was admitted into La Charité Hospital in consequence of a tumor situated on the right side of the scrotum. It was of about the size of the fist, firm and unyielding, and seemed to be quite distinct from the substance of the testicle: its enveloping integument too presented a very different appearance from that of the skin of the scrotum. When examined by the fingers, it felt irregularly knobby or lobulated; and was so insensible that it might be pricked and even cut without causing any pain to the patient. From an ulcer on its posterior surface a small tuft of hair had come out, and from another on its anterior surface some glairy grumous matter had several times been squeezed out. The consideration of these various circumstances suggested to M. Velpeau the idea of a *fœtal growth*, or a *product of conception*, although several surgeons had regarded the tumor as of a fibrous or cancerous nature.

The following is the account given of the tumor after extirpation:—

“The examination of this tumor has enabled us to discover within its substance the presence of almost all the anatomical elements of the body of a mammiferous animal. Thus, its external or enveloping stratum was evidently of a cutaneous nature; its principal substance was a *melange* of laminæ and fibres, which suggested the idea of cellular, adipose, and muscular tissues. In the interior, we found two small cysts whose contents resembled albumen or the vitreous humour of the eyeball; another cyst, which was as large as a partridge’s egg, contained a matter of a greenish-yellow colour and of semi-fluid consistence like meconium; in a fourth, sac there was a grumous mass of a dirty-yellow hue, concrete and surrounded with hairs: this matter, when examined with the microscope, exhibited all the characters of sebaceous matter and of epidermic scales or laminæ. From one of these cysts, that one which was filled with the greenish matter, came the tuft of hair; and the opening, from which this came out, had some analogy with an anus. Imbedded in all these elements were numerous portions of a skeleton which were perfectly organized, and which indubitably belonged to *veritable* bones and not to merely accidental productions. These bones, which were all invested with a periosteum, and which were not only moveable upon each other, but exhibited also genuine articulations, were divisible into three groupes: the first groupe consisted of three pieces which seemed to be the clavicle, the scapula, and a portion of the humerus; the second groupe, much larger than the former, seemed to belong either to the pelvis or to the base of the cranium, according as we might consider the central portion to be the body of the sphenoid bone or the sacrum; and the third groupe seemed to comprise portions of the vertebæ or fragments of undetermined bones.”

But however uncertain may be our conjectures as to the classification of the different bones, we cannot for a moment doubt but that they belong to a product of fecundation, in other words to a fœtus already considerably advanced in development. The fact cannot be denied, however difficult it may be to afford any explanation of it.

In that variety of monstrosity, designated *monstrosity by inclusion*, which consists in the development of one fœtus within some part of the body of another, the inclosed fœtus is always found to be surrounded or enveloped with a cyst, so that it is, as it were, a foreign substance imbedded in the tissues of the fœtus

which has continued to live. In the examples related by Saint *Donat*, *Prochaska*, *Dietrich*, &c., where there were the appearances of foetal debris in the testicle, it may fairly be a question whether in such cases the tumor was not of an encysted nature, or produced by some organic parts in a state of decomposition; but certainly in the case related above, every thing on the contrary had continued to live. The abnormal tumor had its own colour, its own consistence, and its own sensibility, quite independent of the body which supported it: a distinctly marked line separated its teguments from the skin of the scrotum. "I have pinched it most severely, and pricked it with various instruments, and the youth has himself repeatedly forced the blade of a pen-knife into it without causing any pain! the wounds however always bled freely, inflamed, and cicatrised like those of any other organised part: there was no other sign in it of an abnormal condition."

One curious circumstance in the history of this case is, that the tumor must have grown considerably from the period of infancy, as the surgeon who saw it about four months after birth, considered it merely a pneumatocele, and paid little attention to it, and afterwards he called it a small phlegmon which would terminate in resolution.

There is reason, therefore, to believe that the tumor continued to increase gradually in size to the fifth or sixth year of age, and that after this period it remained stationary.

M. *Velpeux* closes his narrative of the case in the following words:—

"Is it possible that during intra-uterine life a part of a foetus, the rest of which had disappeared, should become glued, as it were, to the scrotum, so as to remain as a graft or bud? or can we suppose that the foetus had primarily been developed in the abdomen of the other, and then descended through the abdominal ring into the scrotum, and subsequently underwent in its new position a certain change and decay? or lastly, can we regard the tumor and its contents as a creation on the part of the testicle? But I must stop in my conjectures, as these are questions of profound physiology and of transcendental anatomy which it would be unwise to approach, until the specimen is carefully examined by the master of the academy.—*Gazette Medicale*."

It may be interesting to give a brief abstract of the celebrated report of Dupuytren in 1812, on a remarkable case of a foetus being found in the mesentery of a youth 14 years of age. The boy had always been in delicate and feeble health; from his infancy he had suffered from a pain in the left side of the chest and abdomen; and there was a swelling at this part, which was suspected to be of the nature of an encysted tumor. When residing at a boarding school near Rouen, he was seized with fever, attended with a violent pain and tumefaction, extending from the left hypochondrium down to the pelvis. On the seventh day after the attack, his physician felt in the left flank a hard tumor painful to the touch, and seemingly as large as a full sized melon. Gradually his sufferings abated, as a diarrhoea of fetid purulent matter came on. His strength by degrees sank, and he died in a state of complete marasmus. Six weeks before his death he had voided by stool a large tuft of hair.

Dissection. In the left hypochondrium was a large pouch or sac, adhering closely to the walls of the colon. Within were contained two principal masses; one of which was entirely composed of a large handful of densely interlaced hairs, and the other consisted of a fleshy osseous mass invested with skin: at one of its extremities there was a deformed head with an imperfect nose, eye, and ear; and at the other an appendix in the form of a limb terminated by several *languettes* which were provided with nails; from the centre of the mass, which seemed to occupy the place of the chest and abdomen, there proceeded a thick short ligament to be inserted into the walls of the cyst. The organized mass was three inches and a half long, and nearly three inches across. It was sent to Paris, and carefully examined by a committee, consisting of MM.

Dupuytren, Cuvier, Richard, Baudelocque and others. The skeleton was found to be composed of a spinal column, a pelvis, a cranium, rudiments of limbs, and six teeth placed around a sort of mouth; there were no traces of an œsophagus, stomach, lungs or heart; the brain was converted into a hard bony substance.

Dupuytren has recorded that, in addition to this very curious case, he has twice met with the debris of a fœtus in the uterus of young girls, twelve years of age, and in whom the possibility of pregnancy was entirely out of the question.

The *Journal of Geneva* for 1775, mentions a curious case where a cyst exhibiting all the appearances of a uterus, and which inclosed a well formed fœtus, was found in the abdomen of a man who died of dropsy.

To explain the presence of fœtal debris in certain tumors, we must admit one of two hypotheses:—either that of two germs primarily distinct from each other, one has penetrated and been admitted into the other from some cause which we cannot explain, or that they were joined together from the very first in the same ovulum or germ.

The first hypothesis has been adopted, we believe, by *St. Hilaire*; the second by *Himly* in his scientific work (*Geschichte des Fœtus in Fœtu*, 1831), and *Santo Fattori*; and certainly receives support from the known fact that we occasionally meet with two germs in the same seed-grain, and also in the same bird's egg.

Whichever opinion we adopt, we must admit that one of the fœtuses becomes somehow inclosed within, and grows as it were, at the expense of the other; hence the latter has been appropriately termed by *St. Hilaire* "parasite," and the former "autosite."

The parasite is usually enveloped in a membrane which adheres strongly to some part of the autosite, and in which the anastomosing vessels which connect the two beings ramify and inosculate. In no instance has a heart or any organ, which could carry on the circulation of the parasite independently of the autosite, been ever found.

Hair, teeth, and fatty matter in great quantities, form usually the greatest bulk of the parasitical growth; and these structures require, it is well known, a small amount of vitality for their production.

M. St. Hilaire has grouped the various *monstrosities by inclusion*, (as they have been termed) into two classes—the external or those situated under the integuments, and the internal or those situated in one of the visceral cavities.

Of 19 cases of external parasitical growths, recorded by different authors, one was situated in the neck, one in the epigastrium, one over the pubes, eleven over the sacrum, and five over the scrotum.

Of those situated in the sacral or sacro-perineal region, most were moveable, fluctuating, and well-supplied with blood-vessels; in some of the cases they were felt to contain a hard substance or substances within: such tumors have been known to hang down as low as the knees. In most of these cases, the autosite fœtus or child has had some other congenital malformation, such as imperfect development of the limbs, hydro-rachis, &c. and has seldom survived long after birth.

Of 22 cases of internal parasitical growths, eighteen have been found in the abdomen, one in the anterior mediastinum, one in the ovary, and two in the uterus, before conception was possible. In the abdominal cases, the tumor has always been found to be external to the peritoneum; and most frequently it has been situated in the upper part of the abdomen. If such be always the case, the diagnosis of such tumors from extra-uterine conceptions may be assisted by attending to these two circumstances.—*Bulletin de Therapeutique and Bulletin Med. Belge.*

M. GUERIN ON SUBCUTANEOUS ORTHOPÆDY.

We are informed by this indefatigable reformer of deformities that within the last four years he has performed upwards of a thousand operations for the section of muscles or tendons in different parts of the body.

The following catalogue of muscles divided he gives in the number of the French Medical Gazette for last May.

1. In the neck—the sterno-mastoideus, cleido mastoideus, trapezius, angularis scapulæ, splenius, complexus colli, and cervicalis descendens.
2. In the back—the trapezius (along its entire attachment to the scapula), rhomboidens (along its entire attachment to the scapula), dorsalis magnus, sacro-lumbaris, longissimus dorsi, and transversalis dorsi.
3. In the upper extremities—the deltoideus, biceps, supinator longus, radialis anticus, ulnaris anticus, flexor sublimis, and extensor digitorum communis.
4. In the lower extremities—The psoas and iliacus, (*psoas-iliacque*), adductor longus, sartorius, rectus anticus, tensor vaginæ, glutei, biceps, semi-tendinosus, semi-membranosus, rectus internus, tendo-achillis, tibialis anticus, tibialis posticus, flexor communis longus et brevis, flexor pollicis longus et brevis, extensor longus communis, extensor pollicis, peronei anticus et laterales, plantaris, adductor and abductor digiti minimi.
5. Aponeuroses—fascia lata, and plantaris.
6. Ligaments—sterno-clavicular, scapulo-humeral, coxo-femoral, lateral of the knee, tibio-astragular, lateral and posterior astragulo scaphoid capsule, and scaphoid-cuneiform capsule.

ON THE SUBCUTANEOUS INCISION OF JOINTS.

In a former memoir on subcutaneous wounds—vide the last number of the Medico-Chirurgical Review—M. Guerin has shewn that, as long as wounds are kept quite excluded from the contact of the air, there is seldom any tendency to inflammation set up, while the healing of the divided parts is usually effected very rapidly.

Hence the importance of performing certain operations without making more than a mere puncture of the integuments. In his second memoir the author proceeds to shew by experiments on men and on animals, that the subcutaneous incision of joints is as exempt from danger as that of tendons, muscles, nerves, and small blood-vessels, and moreover, that it may afford in certain cases a valuable means of cure in the hands of the scientific surgeon.

In two dogs he opened successively, by the subcutaneous method, the humero-cubital, the radio-carpal, the femoro-tibial, and the tibio-tarsal joints; and he found that, whenever the wounds were kept quite excluded from the admission of the air, they rapidly healed without any inflammation.

When the joints thus opened were allowed to be moved about, a synovial swelling usually appeared around the wound, but when they were kept quite quiet and extended, even this trifling accident did not supervene. If however the air was permitted entrance, inflammation and subsequent suppuration were invariably induced.

M. Guerin, reasoning upon the results of these experiments as well as upon what is well known to happen after some severe dislocations, very rightly inferred that there cannot be any essential danger in making an incision into a joint, provided the air be excluded from the synovial cavity. He has now in several cases divided the ligaments and portion of the capsules of the knee and ankle-joints; and in none of these operations has any unpleasant symptom manifested itself.

The wound in the integuments should always be as small as possible, and far distant from that into the joint: moreover it should be made when the limb is extended, and never when it is bent; and lastly, the joint should be kept perfectly motionless for some days afterwards.

"These two last-named injunctions, are," M. *Guerin* observes, "the more necessary to be attended to, as I have discovered recently that in all the movements of joints their cavities become more or less enlarged, and therefore that as a vacuum is thus formed, there is a strong tendency to the suction of air, if any communication exists with the outer surface."

In the third part of his memoir, the author points out the useful applications which may be made of his researches to the improvement of surgery. Serous, sanguineous, or purulent collections within the joints may be evacuated without danger. Among the most extensive and important applications, he mentions the subcutaneous division of articular ligaments and capsules, with the view of maintaining in a fixed condition certain congenital and also some old dislocations after they have been once reduced; also the exciting of adhesions, and favouring the formation of new articular cavities.

Already he has effected in this way the cure of a congenital luxation of the clavicle which had resisted every means that had been tried, by making numerous sections of the ligaments all around the displaced joint.

ON CONGENITAL SUBLUXATIONS OF THE FEMUR.

The following are the conclusions which M. *Guerin* has drawn from all his researches on this question.

1. Congenital luxation of the femur is, like club-foot, wry-neck, and deviations of the spine, the result of primary muscular retraction; and the various forms of this luxation considered as to their seat, their direction, and their degree, are produced by the muscular retraction being differently distributed, and by its elements being differently combined, in the muscles of the pelvis and of the thigh.

2. There is an order of congenital deformities of the hip, which has not been noticed by any writer, and which I have called *pseudo-luxations*, because they present the deceptive appearance of luxation without the escape of the head of the bone from its socket;—this also is the result of muscular retraction.

3. The essential treatment of these deformities, independently of the means already known, consists in the section of the retracted muscles. I have already performed this operation three times with success.

These remarks are equally applicable to the congenital luxations of other joints. The essential cause of all, wherever they are seated, is what we have stated above—viz. primitive retraction of the muscles inducing shortening, partial paralysis, and arrested development of their tissue. A few weeks ago I divided the biceps, semitendinosus, semimembranosus, and rectus internus muscles in a case of incomplete luxation of both knees, which occurred in a girl fourteen years of age: on each side there was a sub-luxation of the tibia backwards upon the condyles of the femur, a considerable rotation outwards of the leg, and also an inclination outwards of the leg upon the thigh of nearly 60 degrees. On the day after the operation the outward rotation, the lateral inclination, and this displacement backwards of the tibia were no longer perceptible, and there was merely a certain degree of flexion of the leg upon the thigh: the cure was complete, with the exception of this partial flexion remaining permanent.

To give confidence, adds M. *Guerin*, to those who have not had an opportunity of witnessing the *innocuous nature of subcutaneous operations*, I may state that the

other day, in the case of a young girl, I divided thirteen different muscles or tendons for the relief of various deformities, and that from the following day she experienced neither pain nor *malaise*, nor any symptom of inflammation in the seat of the divided muscles.—*Histoire des Difformités du Systeme Osseux.*

OPERATIVE MIDWIFERY IN HOLLAND AND GERMANY.

Case of Symphysiotomy.

A woman, 26 years of age, and who had been twice before delivered of dead children by means of the forceps, became a third time pregnant. Dr. *Gelauff*, who had attended her in her former pregnancies, *unwilling to expose himself to the recurrence of so much difficulty as he had met with before, and wishing moreover to deliver a living child*, resolved to perform the operation of dividing the symphysis pubis for the purpose of increasing the antero-posterior diameter of the inlet of the pelvis—which he ascertained to be less than three inches. The operation was performed between five and six o'clock P. M. we are told, according to the rules of art; and the bones were separated a little less than half an inch. The pains did not come on briskly for several hours afterwards; but about ten o'clock they increased so much that, very soon afterwards, the child was expelled alive. The placenta also came away as after a natural labour. The recovery was altogether so satisfactory that the woman was able to walk about at the end of the fourth week.

Cases of Cæsarian Operation.

A woman, 32 years of age and seriously deformed from rickets, unfortunately became pregnant. At length the period of labour came on, and Dr. *Straek* of Cassel ascertained that the child was alive, but that the pelvis was so much contracted that no living child could pass through it. The operation of extracting the child by the Cæsarian section was therefore determined on. Having divided the abdominal parietes and peritoncum in the usual manner, an opening was made into the uterus and sufficiently enlarged to enable the operator to introduce his hand, turn and bring out the foetus—the placenta also was easily removed.

The uterus immediately contracted upon itself, and expelled a quantity of coagula which were carefully wiped away. The contraction being deemed sufficient—half an hour elapsed for this purpose—the external wound was brought together by several stitches, and long strips of adhesive plaster.

The child, when put into a bath, cried lustily. The mother, in spite of two or three attacks of pulmonic irritation which required venesection, ultimately recovered most satisfactorily. For the first few days she was able to suckle her child, but, the secretion failing, a wet-nurse was engaged.

Dr. *Hoebeke* of Brussels, whose extraordinary success in Cæsarian operations we gave a short account of in the Number of the *Medico-Chirurgical Review* for October of last year,* has appended to the above account the report of the following case which occurred in his practice so far back as the year 1829.

* We presume that it is the same gentleman, although in our preceding notice he is designated M. *Hoebecke* of Sottegem in Flanders. He has performed the operation thirteen times; ten mothers and nine children have been saved. The fatality of the operation in the practice of other medical men he attributes not

Case 2.—A poor woman, who was miserably rachitic, had been in labour for three days when Dr. H. was called to her assistance. He found that the antero-posterior diameter of the pelvis measured less than two inches. Various fruitless attempts having been made by the accoucheur in attendance to apply the forceps, and extraction *per vias naturales* being in truth impracticable, the Cæsarian operation was at once resolved on. The child was found to be dead, when taken out. The woman was completely cured, we are told, by the end of the third week. (!)

Remarks.—We have repeatedly condemned the unjustifiable disregard of maternal life in various countries on the Continent, as exhibited in the readiness with which the medical men perform the frightful operation of the Cæsarian section. Not only in Germany and Holland, but even in France, where the surgeons and physicians, to their credit be it said, are usually among the foremost to adopt any acknowledged improvement in all the departments of the healing art, is this operation much more frequently resorted to than with us, but it is often undertaken under circumstances which every unprejudiced person, be he medical or not, will surely not hesitate to condemn. For example, the pelvis of a woman may not be so well formed as to give passage to a full grown nine months' child, but yet be sufficiently ample to permit a seven months' child to pass; and as it is well known that children at this premature period are usually *viable* or capable of sustaining life, then why allow any poor deformed creature to go her full period of gestation, with the inevitable prospect of a dreadful operation before her eyes? We have more than once within the last few years alluded to cases where women have actually been admitted into hospitals in the sixth and seventh months of pregnancy at which period the deformed state of their pelvis has been ascertained, and yet no step has even been thought of to avert the horrid catastrophe impending over them. Nay cases have been reported where women, who have actually undergone the operation once, have been received again, in a subsequent pregnancy, to be subjected to it a second time!

Let us hope, however, that a more humane, aye too and a more scientific feeling will soon be manifested among our Continental brethren, and that they will be induced to imitate the example set by all the most eminent accoucheurs in Britain—we mean that of bringing on artificial labour at the seventh month or earlier, in cases of ascertained deformity of the pelvis. We perceive, by some of the late reports of the Academy of Medicine, that one of the leading obstetrical authorities in Paris, M. Dubois, has been acting on this principle in the case of a poor dwarf who had unfortunately become pregnant. Labour was induced at the beginning of the eighth month by means of a piece of sponge introduced into the os uteri, and of the administration of the ergot of rye,* both by the mouth and in enemata; the child was born alive, and the mother recovered most favourably.

so much to the dangers necessarily consequent upon it, as to it having been undertaken at inopportune times. The particulars of his extraordinary success will be found in a volume which he has recently published and entitled *Observations Pratiques de Chirurgie et d'Obstetricie*.

* We are surprised to find that so intelligent an accoucheur as M. Capuron should question the propriety of the practice of his colleague in this case. The only reason that he gives is, that he has known a case of a woman, whose height was short of three feet, giving birth to a living child at the full time. Surely it does not follow that, because she was so diminutive, her pelvis was not developed. As a matter of course, the size of the pelvis is to be ascertained before we resort to the induction of labour.

In a recent number of *Schmidt's Jahrbucher*, we find a report of a successful case of Cæsarian operation performed by Dr. *Michaelis* of Kiel* ; and short notices of several other cases which have occurred in different countries within the last year or two. They are as follow :—

1. Cæsarian operation fatal, by Mr. Ward, (extracted from an English journal). The inlet of the pelvis was not more than one inch in its antero-posterior diameter, in consequence of the extreme projection of the sacro-vertebral angle ; the fœtus was dead.

2. Cæsarian operation ; extraction of a living child ; death of the mother on the third day. Another fatal case is also recorded by the same gentleman, Dr. *Hamm* ; and both are detailed in a late number of the *Neue Zeitschrift*.

3. Cæsarian operation successfully performed for the second time on the same woman, by Dr. *Foy*.—*American Med. Journal*, 1838.

4. Successful case of the Cæsarian operation, by Dr. *Bauer*.—*v. Journal de Siebold*, t. xvi.

5. Successful case by Dr. *Hertzbruch* ; death of the child.—*v. Neue Zeitschrift*.

6. Successful case by Dr. *Wiefel*.—*v. Casper's Wochenschrift*.

7. Second history of a successful Cæsarian operation by Dr. *Schenk*.—*v. Siebold's Journal*.

8. Successful case by Dr. *Petrenz*.—*Ibid*.

To these cases we may add another in which M. *Dubois* performed the operation last March, at the Clinique des Accouchements in Paris ; the child lived, but the mother died on the sixteenth day after the operation of tetanus, after the fairest promises of recovery.

In the report of this case it is stated that M. *Dubois* has now performed the operation *five* times : every one of the patients has died.

Contrasted with this, the success of the German and Dutch practitioners is indeed surprising. We read of the operation having been performed two, three, and even four times on the same woman ! It seems almost incredible that any woman would expose herself to such inevitable suffering after having once undergone this most frightful operation ; and yet from a report of M. *Michaelis* it appears that of 40 women who had recovered from it, 15 of them again became pregnant !

ON THE SWEATING REGIMEN OF DR. PRIESSNITZ AT GRAEFENBERG.

For some years past a Dr. *Priessnitz* has acquired a great reputation over Germany for the success which has attended his practice for the cure of chronic diseases, and which has made his residence at Graefenberg visited by invalids from all parts of the Continent. Dr. *Bigel*, Knight of the Legion of Honour, and one of the Medical Professors in the Imperial College at Petersburg, has recently published an account of this regimen, under the title, " Manuel d' Hydrosudotherapie, ou Traitement des Maladies par l'eau froide, la sueur, l'exercice, et le regime." He seems to be an ardent admirer of the sweating regimen as pursued at Graefenberg, and, as he has derived personal benefit himself from its adoption, we may attach the more credit to his statements. Dr. *Priessnitz* is evidently a disciple of the old humoral school of pathology—and we believe that in this respect he is far from being alone either among his own countrymen, or his professional brethren in England and France—for he considers almost all diseases to arise from the existence of some morbid or peccant humors generated

* This gentleman has performed the operation in three other instances ; and in two of these it was successful.

in, or introduced from without into, the blood; and his practice, founded upon this idea, essentially consists in using means to effect the expulsion of these humors from the system, and to replace them with healthy juices. These means are *water, air, exercise, and diet.*

The causes which, in his opinion, most frequently engender the unhealthy humors of the body, are the use of improper food, or the excess of what is wholesome, the suppression of perspiration, the want of due exercise, the influence of various mental emotions, especially such as are of a depressing nature, the inhalation of a noxious atmosphere, the neglect of cleanliness, the use of stimulating liquors, &c.

His remarks especially on the neglect, as well by physicians as by unprofessional people, of the use of baths and other means to regulate the state of the cutaneous functions, are exceedingly pertinent: "We every day," says he, "see whole families purged and vomited by the order of their physicians, but rarely or never do we hear of their being recommended to wash their skins."

No one can find fault with Dr. Priessnitz's practice in this respect; in it there is certainly no want of washing both inside and outside man's 'muddy vesture of decay.'

"Ablutions," says he, "with cold water, are doubtless highly useful in promoting the cutaneous exhalation, a function so necessary for the preservation of health; and the drinking of cold water contributes not less powerfully to the same end, by preventing the *stasis* of the juices and impressing upon them a regular circulation. Again, it is no less important to expose as frequently and as freely as possible the body to the fresh air, since it is from this element that we derive the very principle of life, the oxygen. Just in proportion as there is less air, so there is less oxygen, and consequently the less of the principle of life is present." He insists very particularly upon the utility of drinking very largely of pure cold water. Copious libations of this element constitute a most important part of his regimen. In reference to other beverages, he says:—

"It is a great mistake to suppose that the use of pure cold water can be compensated by the drinking of tea, coffee, or thin beer, as is too commonly imagined; for it is not only as a diluent, and dissolvent of acrid matters in the bowels and kidneys, and as an attenuant of unwholesome juices in the blood, but also as a powerful means of communicating oxygen to the system, that pure water, taken in large quantities, acts so beneficially. In short, let any one try the effects upon him or herself of drinking freely and largely of the fair element, and he will not fail speedily to acknowledge that his health has been much improved."

M. Priessnitz is by no means a *starving doctor*; a fundamental principle of his treatment being to maintain the system in a state of vigorous strength. But then he is somewhat of an exclusive. He interdicts all spiced and highly-seasoned dishes, all hot peppers and other foreign spices, which may suit the natives of the countries where these grow, but which are not required in our climates where the air, by being more highly charged with oxygen, is more stimulating. He permits the free use of our own vegetable productions, such as our various culinary herbs and salads, including radishes, mustard and such like stimulants, provided the patient is free from gout and cutaneous disease.

Cold meats he prefers to hot, especially for persons with weak stomachs. For breakfast and supper by far the best articles of food are bread, milk and butter.

He does not restrict his patients as to the quantity of the food they take; Nature he thinks, will seldom err, in this respect, provided the appetite is not provoked by condiments or stimulating liquors, and the person takes sufficient exercise.

The grand principle of his treatment consists in supplying the system with the means of deriving healthy juices from the food that is taken, while, on the one hand, all the poisonous and peccant humors are evacuated by regular copious

sweating effected in the manner which we are about to describe, and, on the other, the system is fortified by the use of cold bathing, used while the sweating continues.

Our readers will observe that his practice in this respect is entirely analogous to that of the Russians, who, it is well known, are in the habit, upon leaving their vapour baths, of immediately, and while the body is drenched with perspiration, rolling themselves in the snow.* Dr. Priessnitz has probably derived the hint from this custom of his neighbours.

The following is his plan of a *sweating bath*.

The person, stripped naked, is inclosed in a long blanket, which is then to be wrapped close round his head, body and limbs, (the arms are to be kept applied to the sides, or folded across the chest,) leaving no part exposed but his face. The ends of the blanket are to be tucked up, as nurses do with the clothes of an infant, and the whole is then to be secured with bands put round various parts and tied.

The patient thus hermetically cased in his blanket, is to remain quite quiet—he may fall asleep if he chooses—until the skin begins to sweat freely. This seldom happens before the expiry of one hour, and frequently for not a much longer time.

By endeavouring to move his limbs up and down, and by rubbing his body with his hands as well as he can in his mummy-like wrapping, the tendency to sweating will be increased.

As soon as this commences, the window of his chamber is opened, and he is to drink, every quarter or every half hour, a glassful of cold water. This increases the perspiration so much that it often not only oozes through the blanket but drips down on the floor. Sometimes not less than seven pounds may be collected in a vessel placed below the bed. The sweating is to be kept up for at least an hour; in certain cases for two, three, or even four hours. Some patients are subjected to this process twice in the twenty-four hours, at four o'clock in the morning, and again an hour or so after dinner.

When the sweating has been continued sufficiently long, the patient is then unwashed, and, covering himself with a cloak, he hurries to the bath, where, after first wetting his head and chest with the water, he plunges into the cold water, his body still streaming with perspiration. While in the bath, he should move about his limbs and exercise every part as briskly as possible, in order to promote a reaction in the cutaneous vessels.

Now this quick transition, from a state of profuse perspiration to the use of a cold bath; is not attended with any danger, such as is often the case, if the body has been perspiring freely from violent exercise, or from the use of stimulating sudorifics. The important feature of M. Priessnitz's plan is, that the organs of circulation and respiration are not at all quickened or excited; they remain quite tranquil. Hence there is no sudden check given to these vital functions, and the body, instead of being chilled by the sudden transition, is invigorated and glows with warmth over its entire surface.

The greater that the cutaneous reaction from the use of the bath is in any case, the more favorable is the prognosis, and the more speedy will the cure of the existing disease be.

When the patient is unwashed to go to the bath, all that is necessary is only to drink a glass of water as often as he may feel himself much heated. For the same reason it is not requisite to wet the head and chest before plunging into

* The same impunity is observed in the eating of ices in tropical countries, when the body is perspiring freely, provided always the breathing is not quickened at the time, and gentle exercise is taken immediately afterwards.—Rev.

the bath, except when this (the bath) is situated at some little distance, and when the outward air may possibly have somewhat closed the open pores of the skin. Let no one be sceptical of the truth of these statements.

Any one, who has witnessed the patients at Graefenberg, will be at once satisfied that there is not the least danger in plunging into a cold bath while the whole surface is sweating most profusely, *provided the breathing is not hurried at the time.*

If attention be paid to this one caution, there is little or no risk of any injurious consequences from the immediate transition from a state of profuse perspiration to immersion in cold water. But if the surface is permitted to be at all chilled, and the perspiration is in any degree checked by unnecessary delay, before the immersion takes place, a portion of the internal heat of the system, which is requisite for its due reaction, is lost, and then unpleasant consequences are often observed to ensue.

We again repeat that if these two precautions—viz. the preventing a quickened state of the breathing, and a chilled state of the skin—were more uniformly attended to, we should hear of fewer accidents from bathing when the body was heated or perspiring freely.

On leaving the bath, the body is to be well rubbed; and the person then dresses himself and takes a walk for half an hour or upwards, to keep up a uniform glow over the whole system. During this promenade, it is useful to drink a tumbler-full or two of cold water.

In many cases the cold douche baths are used at Graefenberg with astonishing success, especially against chronic gouty, and rheumatic ailments. The patients always walk to them, for they are all situated at a considerable distance from the dwellings, exercise after their use being strongly recommended: during this exercise cold water is to be freely drunk.

There are various other ways in which cold ablutions are recommended by Dr. Priessnitz, such as the hip and foot bath, washing the head with cold water, and injections of it into the bowels. In short cold water is the sole and only remedy that is used in almost every case. No other application is ever applied to any abscesses or outward sores, than linen dipped in cold water and then covered with oil-silk or other means to prevent the evaporation.

The sweating regimen at Graefenberg induces, in very many cases, an eruption of boils on various parts of the body; these, when troublesome, are always treated with fomentations of cold water. Ointments are never used.

From the preceding remarks, our readers will see that the sweating regimen of Dr. Priessnitz is any thing but a feeble and ineffective practice. If there are peccant humors in the body when sick—and who will deny their presence?—and if these humors can be expelled by perspiration, then there is no *modus medendi* comparable to the one which we have described as pursued at Graefenberg. The profuse sweating, induced in the manner which we have mentioned, is in every respect much preferable to what may be excited by severe bodily exercise, or by the internal use of any sudorific remedies. Then, too, the bold practice of immersing the patients while in a state of profuse perspiration into cold water must, if no evil consequences ensue from the sudden transition, most powerfully invigorate and harden the system.

Let it be remembered that copious libations of the pure element at the same time form a necessary part of the treatment. Dr. P. says that no patient should drink less than at least twelve tumblerfuls during the course of the day: some take as many as twenty-five or even thirty. In some obstinate cases, this practice has been continued for upwards of twelve months, and ultimately with complete success.

Exercise, also, is a necessary part of the regimen, as the vigour of the circulation cannot be kept up without it.

In conclusion, we shall briefly describe the regimen of a day at Graefenberg,

as pursued by Dr. *Bigel* and other patients, under the directions of Dr. *Priessnitz*.

At four o'clock in the morning, a servant comes to roll you up in blankets. In Summer you will probably commence to sweat in from half an hour to an hour. After having sweated for about a couple of hours you go to the bath. On coming from the bath, you walk about, and drink occasionally a glassful or two of cold water, until the breakfast hour arrives. When this is over, you again walk about and drink more water. About eleven o'clock you go to the *douche* bath, and return at about noon, the hour of dinner. After this repast, the parties usually form themselves into different groupes either in the pleasure-grounds or elsewhere. About four o'clock is taken the last promenade, which may be called the sudorific one, as it consists in walking briskly up and down a hill, so as to encourage a very free perspiration. A cold bath is again taken; then a little exercise after the bath, and at eight o'clock supper is ready. A ball, a concert, or another promenade in the grounds closes the evening. Before retiring to bed, a hip-bath is used, the wetted compresses are placed on his bed, and the person then lays himself down to sleep.

For the first week or ten days, the patients are not subjected to so severe a regimen as afterwards, when their constitutions have been in some degree prepared, and are already considerably fortified. The sweating, for example, is not continued at first for more than an hour, and they do not remain above from five to fifteen minutes in the cold or in the *douche* bath.

Even with these precautions the regimen is in most cases found to be very exciting, and to induce a considerable febrile reaction in the system, and not unfrequently also diarrhœa, vomiting, and the development of abscesses, boils, and other forms of cutaneous eruption. The number of boils that make their appearance is sometimes surprising; from fifty to a hundred have been counted in one patient. They are considered as so many issues for the discharge of the morbid humors of the system through the cutaneous exhalants.

When the number or size of these abscesses is great, an abatement of the bathing regimen is generally necessary: the *douche* and the plunge baths are to be used for a shorter time, as these are powerful agents in promoting the derivation of the humors in the system towards the surface; but the sweating part of the regimen is continued as before, because thereby a portion of the vitiated humors, which would otherwise be discharged by the abscesses, is got rid of by the exhalants of the skin.

PHYSIOLOGY OF VENTRILOQUISM.

Before explaining what seems to be the true interpretation of this curious *trick* of the voice, let us very briefly allude to the opinions which have been held on the subject by various writers..... "There can be very little doubt," says *M. Colombat*, "but that many of the oracular prophetesses, as those at Delphi, &c. were more or less adroit adepts in ventriloquism. So was the Witch of Endor, who evoked the ghost of Samuel at the bidding of Saul, and probably also the Pythoness mentioned in the Acts of the Apostles. As, in those times, whatever could not be explained was at once referred to the doing of the devil and his ministers, the ventriloquist was generally regarded as a person under the influence of demoniacal possession. It was believed that the voice came from the belly—hence, indeed, the origin of the word."

Haller and others attempted to explain ventriloquism by saying that the voice was formed during the act of inspiration.

In 1770, *Baron Menges*, who was a ventriloquist himself, said that, in his opinion, the art consisted in keeping the tongue pressed firmly against the teeth,

and in making them and the left cheek a circumscribed cavity, in which the voice was formed with the air held in reserve within the throat. The sounds had thus, he said, an obscure hollow tone, which gave the idea of their issuing from the belly. At the same time it is necessary to draw in the breath as seldom as possible, and to manage the expenditure of the air which has been inspired.

MM. *Dumas* and *Lanth* consider ventriloquism as a rumination of the voice, which, after being formed in the larynx, is thrown back into the chest, where it assumes a peculiar tone and acquires, on re-issuing, that dull and seeming-distant sound which gives rise to the illusion.

M. *Comte*, our (French) celebrated ventriloquist, tells us that, as far as he can judge, the voice is formed as usual in the larynx, but that the play of the other parts of the vocal apparatus modifies it, and that the act of inspiration directs it back into the thorax, where it resounds.

Sir *John Herschell*, in his Treatise on Sound, alludes to ventriloquism as being an art founded on the property of sound being not conveyed in a straight line, and on the difficulty therefore of the ear judging of the direction from which the sonorous undulations proceed. According to this distinguished philosopher, this incapacity of the ear, by which sounds which have a very simple and easily-explicable origin acquire a strange and unnatural character, depends not upon any imperfection of the auditory organs, but altogether upon the very nature of sound, whose "angle d'incertitude" is ever-varying according to the state of the atmospheric air and the nature of the surrounding objects. He adds that the voice of the ventriloquist is formed in the throat without the co-operation of the mouth and lips—the difference between the sounds so produced and those formed by the natural mechanism of the voice occasioning the deception.

The last opinion that we shall quote is that held by Dr. *Lespagnol*, and is the one which seems to us to be by far the most correct. He supposes that it is mainly by the aid of the velum palati preventing the escape of any of the air by the nasal passages that the ventriloquist is enabled so to modify the sounds of his voice as to produce the illusion. The only difference, says he, between the near and the distant-seeming voice is, that in the first we hear the sounds that come from the mouth and the nose, whereas in the second they proceed solely from the cavity of the cheeks. Indeed any one may, in a certain degree at least, verify the correctness of Dr. *Lespagnol's* opinion upon himself. No peculiar conformation of the respiratory or vocal organs is required; all that is necessary is that there should be a certain pliancy or mobility of the upper part especially of the vocal apparatus, and a sufficiently ample expansion of the lungs; and it will be found that with moderate practice almost any person will attain some skill in the tricks of ventriloquism. M. *Colombat* tells us that he has taught himself the art to a certain extent in the following manner. After filling the lungs completely by taking in a very deep breath, he contracts as powerfully as he can the velum palati, the pharynx, the base of the tongue, and all the muscles of expiration, in such a manner that the emission of the voice is effected by expelling as little as possible of air from the lungs, and at the same time so that the sounds produced do not re-echo in the nasal passages as in ordinary speaking, but in the cavity of the mouth only. This result is to be obtained with tolerable ease by forced contractions of the velum palati, and of all the muscles of the abdomen, chest, and neck. At the same time to render the voice as far seemingly-distant as possible, it will be found useful to lower its pitch and soften its tone, by raising the point of the tongue towards the uvula, in such a manner that the concave surface which the organ then presents may act as the *sourdine* (the little pipe in the mouth of a trumpet, &c. to lower the tone) of a wind instrument, or as the finger of the player with a stringed one.

According to this explanation of ventriloquism, the great secret of success depends upon preventing the air from escaping at all by the nose, and upon causing it to come entirely from the mouth in a slow and forced manner.

The voice so produced is dull, and has the feeble tone of a sound from a distance. To add to the delusion, if we wish to impart to the voice the tone of coming from any given spot, we have only to direct the attention of the listeners to that spot, and then to speak in that direction, elevating the velum palati in a greater or less degree, in order that the voice may at pleasure seem to approach or recede. It is always essential to success to keep the lips and jaw as much as possible motionless; and the ventriloquist, to prevent his audience from perceiving the slight movements of these parts, will do well to stand sideways to them, so that the profile only of his face can be seen. Lastly, every ventriloquist must be more or less of a good mimic, and have the talent of imitating various sounds with his natural voice.

It is well to add that in vain he might exercise all the resources of imitation and of artificial pronunciation, if sound were conveyed, like light, in straight lines, and if the ear could appreciate its direction as correctly as the eye can that of the luminous rays.

At the present time there is in France a ventriloquist, M. *Vattemare*, who is almost equal to the famous *Fitzjames*, whose extraordinary exhibitions of mimetic talent used to astonish the Parisians and Londoners at the beginning of the present century.

Those who wish to know more about the subject will do well to consult the register of the Academy of Sciences (for January 1771, p. 406), the work of the Abbé de la Chapelle, intitled *Le Ventriloque or L'Eregastrimythe*, and also the numbers of the *Revue Britannique* for December 1828, and March 1831.—*Gaz. des Medecins*.

ON THE NEW (DECIMAL) SYSTEM OF WEIGHTS IN FRANCE.

Since the beginning of the present year, the French government has ordered that the old system of weights used by chemists and druggists, and consisting of grains, scruples, drachms and ounces be abolished, and be replaced with a decimal system as follows.

One grain equivalent to 5 centigrammes.

10 grains	50	centigrammes.
20 "	1	gramme.
30 "	1	gramme and 50 centigrammes.
40 "	2	grammes.
50 "	2	grammes and 20 centigrammes.
One scruple (24 gr.)	1	gramme and 30 centigrammes.
One drachm	4	grammes.
Two drachms	8	"
Half an ounce	15	"
One ounce	30	"

It will be observed that there is an exact analogy between this decimal system of weights and the existing division of money in France. Thus the *franc* consists of 20 sous or of 100 centimes, just as the *gramme* consists of twenty grains or of 100 centigrammes.

By bearing this simple rule in mind, the medical practitioner and druggist will at once be able to reduce the former weights to the present decimal standard. Thus, if he wishes to prescribe 12, 15 or 18 grains of a medicine, he has only to substitute the idea of sous for grains; and by reducing the sous into centimes he may reduce, by this simple operation, the grains of any medicine which he may wish into centigrammes.

Thus twelve grains make 60 centigrammes, 15 grains 75 centigrammes, 18 grains 90 centigrammes, 24 grains 1 gramme and 20 centigrammes; just as in 12 sous there are 60 centimes, in 15 sous 75 centimes, in 18 sous 90 centimes,

and in 24 sous 1 franc and 20 centimes. Moreover, we have only to substitute the idea of grammes for that of francs, to discover at once the number of grammes which any number of grains compose. Thus 100 grains make five grammes, as 100 sous make five francs; 530 grains make 17 grammes and 50 centigrammes, as 530 sous make 17 francs and 50 centimes.

The decimal numeration is therefore by no means difficult to keep in mind, and by rejecting all other denominations but the two of *grammes* and *centigrammes* the memory is not at all perplexed. In place of using, as hitherto, the term *decagramme* to denote ten grammes, and then speaking of one, two, three decagrammes, it is far better to say at once 10, 20, and 30 grammes; and in the same way, instead of using the term *decigramme*, as has often been done, to denote 10 centigrammes, we have only to say 10 centigrammes at once, and so on, as 20, 30, 40, 50 centigrammes in place of one, two, three, four, and five decigrammes.

By this simple mode of numeration, we reduce the scale of weights to tally with the decimal scale of measures which has been established for a length of time, and is now perfectly understood by every one. The *metre* is, it is well known, the primary or standard measure of length; but its multiple *decametre* and its fraction *decimetre*—denoting the one 10 metres, and the other the 10th part of a metre—are now no longer used. For example, we do not talk of a man's height being one metre and seven decimetres, but one metre and seventy centimetres, nor of any thing costing one sous and 7 decimes, but one sous and 70 centimes.

A few words on the scruple, drachm, (*gros*), and ounce.

A *scruple* represents 24 grains: to reduce this to the present decimal standard we have only to remember the value of 24 sous; and as they make one franc and 20 centimes, so the scruple is equivalent to one gramme and 20 centigrammes.

The value of the drachm (72 grains) calculated on the bases of five centigrammes to one grain, would be three grammes and 60 centigrammes; but as its value is, according to the *poids de marc*, three grammes and 82 centigrammes, and, according to the Pharmacopœia, three grammes and 90 centigrammes, it has been determined to fix it now as an equivalent of an entire number, viz. four grammes or 80 grains. Nothing can therefore be more easy than to reduce drachms into grammes: we have only to multiply the number of the former by four: thus two drachms of any medicine are equivalent to eight grammes, three drachms to twelve grammes, and so forth.

The value of the ounce has been differently estimated. According to the *poids de marc*, it is equal to 30 grammes and 59 centigrammes; according to the Pharmacopœia to 32 grammes, and according to the metrical pound to 31 grammes and 25 centigrammes. At the suggestion of M. Double, in his luminous report submitted to the Academy of Medicine, it has now been fixed at the rate or value of 30 grammes exactly, excluding thus the additional 59 centigrammes, or about 11 grains of the *poids de marc* standard. To reduce the ounce into grammes is very simple: it need only be multiplied by 30, or if you prefer by 3, adding a cypher to the product. Thus four ounces of any medicine are equivalent to 120 grammes, six ounces to 180 grammes, and so forth.

Hitherto all has been abundantly simple; but a difficulty remains. This is to fix the value of the pound. If the ounce be 30 grammes, and 16 ounces be still considered as equivalent to one pound, the latter must be rated at 480 grammes; but, for various considerations which we cannot afford space at present to canvass, it has been judged better to rate it at 500 grammes; by which valuation it is rendered equivalent to 16 ounces and 20 grammes.—*Bulletin Generale de Therapeutique*.

PROFESSIONAL APHORISMS.

1. The "savoir dire," the "savoir faire," an agreeable exterior and good manners, the knowledge of the world, a certain "je ne sais quoi," which pleases and attracts, are turned to excellent account by some physicians. But it will not do to examine such gentlemen too narrowly; we must not blow too strongly upon this froth; for the prestige quickly vanishes. These qualities are, indeed, to the character what embroidery is to a garment, whose web is of no great value.

2 "An enlightened ignorance;"—these words, although seemingly contradictory, express an important truth. It is given but to very few to reach this high degree of philosophic truth.

What study, what watchings, what meditation, how much judgment and modesty are required to know that we know but little, to estimate at their real value the acquisitions of science, to arrive at length at those limits where it is written, "unknown." *Montaigne*, with much truth, distinguishes "the abecedarian ignorance and the doctoral ignorance;"—the latter requires a whole lifetime's labour to attain to.

3. *Bloodletting* is a very efficacious remedy in pneumonia; *tartrate of antimony* in large doses will often cure this disease; *opium* also may claim considerable success; and *musk* has saved not a few cases. But tell us, you say, with precision when are we to resort to bleeding, when to antimony, when to opium, and when to musk? We are almost compelled to admit that we cannot. It is the same with almost all pathological affections.

Shall we ever see the time, when we shall no longer be acting with hesitation and uncertainty, or pronouncing upon vague symptoms, and groping our way upon mere conjectures?

4. What is the cause of the bitterness of one physician against another? why does he blame him in every thing, and on every occasion? The truth is, he is occupied with the same subject, and he has been less successful. Do you not see the caterpillar abusing the work of the silkworm?—and yet the caterpillar can spin also.

Oh! my friends, guard against medical envy; it is a case of cancerous pathology, which eats its way deeper and deeper, until the whole system is contaminated.

5. The word *Finis* is, after much labour, placed at the end of your book; you have spared neither labour nor study to render it useful and interesting; it is learned and profound, well made and well written. But do you really imagine that you are at the end of your troubles? Remember that it must be printed; and here you will meet with much bother and perplexity. Then comes the publishing; another source of embarrassment and anxiety. At length, the book is published, advertised, &c. What does it want now? A thing rather rare in the present day—readers.

6. It is really absurd and ridiculous to see ourselves so often outstripped in the medical race by dolts and fools; and yet it is a disgrace and a reproach to succeed after the fashion of some people.

7. There are some writers, whose language, by being strong, compressed, and profound, exacts so much from the thought, that it is called obscure and unintelligible. The author of the *New Elements of the Science of Man* is an example

of this style. A physician once said to this great man;—"your book is much too difficult to be understood." "Patience," replied *Barthez*, "I am preparing an edition which will be so clear that every ass will be able to drink from it."

8. The *genus irritabile* is found not only among poets and artists; a large proportion of medical men belong to the same category.

Nowhere is *amour-propre* more ticklish, more sensitive, more galvanic than among them: hence the endless disputes, the petty malice, and the secret love of spite and even of calumny, so prevalent amongst us.

We must manage and accommodate truth itself to these irritable vanities, as we do the light of the sun to very delicate eyes.

My dear brethren, be kind and charitable to each other. The public, not over benevolent at any time to you, only laughs at your squabbles, and quacks all the time reap a rich harvest. Remember that you are the apostles of humanity; be also the sages of time.

9. It is a noble thought and nobly expressed; *Pulchra sunt quæ videntur, pulchriora quæ sciuntur, sed longe pulcherrima quæ ignorantur*. How true of animal physiology, and, indeed, of every branch of physical science! At present we see but in a glass darkly. Will it ever be permitted to man, in his present state of existence, to penetrate the mysteries of Nature more deeply?

10. "I was dogmatic at twenty, an observer at thirty, an empiric at forty, and now at fifty I no longer have any system:"—

So said *Bordeu*: and he is quite right: sooner or later in science, as in life, we arrive at that wisdom which almost resembles the effect of disenchantment. But it is not given to all to reach in practice this high point of medical philosophy.

An acute sense, much knowledge, a superior reason, and a rare talent of disentangling truth from fiction and from mere probability, are necessary to enable us to form a just appreciation of theories and principles, and of their application to practice. Whoever has not acquired these qualities is condemned, like the crowd, to follow the standard of another, and to fall into either an irrational scepticism, or an empirical routine, which is too often dignified with the appellation of experience.—*Gazette Medicale*.

ON THE CAUSE OF MILKY BLOOD.

The experiments of *Lecanu*, *Bertazzi*, *Christison*, and others, have most satisfactorily shewn that this abnormal condition of the blood depends upon the presence of an unusual quantity of fatty matter which is suspended in the serum. While in healthy blood the proportion of fatty matter does not exceed from one to two parts in 1,000, it has been found occasionally in cases of milky blood, as high as 30, 40, or even 100 parts.

It is a curious subject of pathological chemistry to explain how this increase of fatty matter in the serum is induced.

It has been stated by some writers that fatty matter may enter the torrent of the circulation in two different ways—either along with the chyle by the thoracic duct, or by the branches of the vena portæ. *Schultz* found that the blood of this vein contained double the quantity of fatty matter that the venous blood elsewhere did. As a large portion of it is no doubt expended in the secretion of the bile, it must follow that, whenever this secretion is interrupted, a larger

proportion than usual will remain uneliminated from the system, and will consequently become diffused over the entire circulating mass.

But independently of this cause of an accumulation of fatty matter in the blood, the same condition of this fluid may very probably arise from a rapid absorption of the subcutaneous fat, or from any cause which may tend to impede its deposition in the cellular tissue.

By attending to these suggestions, we may be able to explain how this morbid alteration of the blood may be observed in diseases which have little or no analogy with each other, and to anticipate, in some measure, the description of cases in which it will be most likely to occur.—*Annales de la Société de Méd. de Gand.*

ON INVOLUNTARY SEMINAL DISCHARGES.

The second volume of *Lallemand's* valuable work has been recently published, and, as the distinguished Professor of Montpellier is an authority on whatever he treats of, we shall briefly glance at its contents.

In addition to the most frequent and well known causes of involuntary seminal discharges, *M. Lallemand* mentions the immoderate or protracted use of purgatives, narcotics, cantharides, camphor, ergot of rye, coffee, &c. The following are his remarks on the effects of *smoking*.

"If habit deadens the effect of tobacco on the system, the accumulation of its effects and the daily repetition of these must induce more durable changes on various organs. The disturbance of the digestion has been long observed in confirmed smokers; but that of the generative organs has not attracted the attention that the subject deserves.

I am convinced that this must be much more frequent than is generally believed, if I may judge by the torpor into which the organs of generation fall, as soon as the narcotic action of the tobacco is experienced, and by the habitual indifference evinced by confirmed smokers for the society of women. Attentive observation by the physicians of certain countries would probably lead them to detect the influence of these clouds of tobacco smoke on the production of involuntary seminal discharges, upon the dreamy and melancholic habits of many of their acquaintances, and upon the peculiar character of their relations with the other sex."

After having examined the external or extrinsic causes of involuntary discharges, our author treats of those which are attributable to the influence of other organs of the system, and to that of a congenital predisposition. Among the first, he mentions *irritation of the cerebellum*—(in accordance with the phrenological doctrine as to the seat of the amatory feelings);—and among the second, he enumerates congenital phimosis, the immoderate length of the prepuce, accompanied with a rudimentary state of the genital organs, a state of anemia, hypospadias, certain primitive arrangements of the ejaculatory canals, and, lastly, hereditary formation.

Having discussed these topics, *M. Lallemand* alludes to the history of that "self-tormenting sophist," Jean Jacques Rousseau, and with much probability accounts for many of the follies and vices of his strange character in a manner not very creditable to the *sage* of Geneva. He remarks,

"These observations have recalled to my memory many singular and bizarre traits which had often occurred to my mind in youth, while devouring the pages of this celebrated writer; they have also brought back the interminable and envenomed discussions between his admirers and his detractors in reference to his character, his opinions, and his actions. I have lately re-read these fascinating writings with a very different purpose; and I am now fully convinced that I was not mistaken as to the true cause of the solitary walks of *Rousseau*,

of his ambulatory life, his savage misanthropy, and of his strange and paradoxical opinions on the civilization of mankind. We have only to read his Confessions to be assured of all this."—*Des pertes Seminales Involontaires*, par Dr. Lallemand. 1839.

IODURET OF IRON IN THE TREATMENT OF SYPHILITIC ULCERS.

M. Baumes, head surgeon of the hospital at Lyons, has of late used this new ferruginous preparation with most satisfactory results in the treatment of old and obstinate syphilitic ulcers, especially when the state of the system of the patient was at the same time feeble and scrofulous. He administered it in the form of pills with Thebaic extract, increasing the dose of the ioduret from two or three to twelve or twenty grains in the course of twenty-four hours. Along with the cicatrisation of the sores, the improvement of the general health was most remarkable; the appetite improved, the muscular strength increased, and the complexion acquired the florid hue of vigorous health. The salt, no doubt, is taken into the circulation, and acts on the blood itself, as well as on the capillary vessels in every part of the body.

POISONING FROM ARSENIC SUCCESSFULLY TREATED WITH THE PEROXIDE OF IRON.

In a recent number of the German Journal *Medicinische Annalen*, we observe a report of the successful administration of the hydrated peroxide of iron as an antidote to poisonous doses of arsenic. Five persons, three of whom were children, eat some soup in which powdered arsenic had been accidentally mixed. The symptoms were, as usual, excruciating tormina in the bowels, painful vomiting, great prostration, and excessive feebleness of the pulse, &c.

After the third dose of the peroxide had been taken, these symptoms were much mitigated, and under the use of demulcent and quieting drinks, all the patients ultimately recovered.

In another case alluded to by the reporter, a similar success, we are told, followed the exhibition of this ferruginous preparation.

Again, in a recent number of the French Journal *de Chimie Medicale*, M. Batilliat has reported the particulars of a case which occurred in his practice; but, as the quantity of the poison swallowed was in all probability very small, it seems unnecessary to give the particulars. The dried hydrated peroxide of iron was administered in doses of a spoonful at a time; and after the second or third dose the vomiting and other unpleasant symptoms ceased. M. B. recommends the following as a good method for obtaining the moist peroxide in a short space of time.

Let a quantity of iron filings be put along with diluted nitric acid into a large vessel, and heated over the fire; add some water to the solution and decant it off to separate the undissolved filings; then pour into it ammonia to excess, and again heat the liquor over the fire to get rid of the redundant alkali, and also for the purpose of giving a greater degree of cohesion to the precipitate. The clear liquor should then be drawn off by means of a syphon, and the peroxide should be washed repeatedly with hot water, which at first should be acidulated with vinegar: lastly, the precipitate is to be drained by being put upon a linen cloth.

In this way we can procure a sufficient quantity of a *bouillie* of the peroxide in the course of a couple of hours or so.—*Bulletin de Therapeutique*.

GERMAN TREATMENT OF LOCAL PARALYSIS.

Several German writers very strongly recommend the use, internally as well as externally, of phosphorus in cases of paralysis of the optic and auditory nerves.

In a case related by M. *Dezeimeris* in his late elaborate memoir on diseases and injuries of the frontal sinuses, where deafness and blindness on the left side supervened upon a severe injury of the head, he resorted to this treatment with success.

He prescribed as follows :

℞. Phosphori gr. j. solve in
Olei animalis æther. 3j.
Olei caryophyll. ℥j.

Dose.—Three drops, to be gradually increased to 20, to be taken on a piece of sugar night and morning. And

℞. Phosphori gr. ij.
Olei animalis æther. 3j.
Olei cajeputi 3ss. Solve.

The eyelids to be well rubbed with this embrocation three or four times daily.

A blister also was applied upon the mastoid process and kept open.

In four weeks the patient had quite recovered his hearing and sight.—*L'Experience*.

HEPATIC ABSCESS; DISCHARGE OF A BILIARY CALCULUS.

Mad. N., 73 years of age, presented the external signs of an organic affection of the liver. The pain in the right hypochondrium became excessively severe, and high febrile symptoms came on.

After a few days, a phlegmonous swelling made its appearance at the seat of the pain; this quickly assumed all the signs of an abscess, so as to induce the surgeon in attendance to make an opening into it. A large quantity of purulent matter mixed with bile and blood flowed out, and to prevent the healing of the wound, a tent was introduced and left in it. After the lapse of a few days, on introducing a probe along the fistula, a foreign body was felt distinctly. The wound being enlarged, this was extracted and proved to be a biliary calculus of nearly three inches and a half in diameter.—*L'Experience*.

ON ARTIFICIAL NIPPLES OF IVORY.

The following remarks are from a report of Messrs. *Dubois*, *Capuron* and *Ville-neuve*—three of the most distinguished accoucheurs of Paris—on the artificial nipples recently invented by M. *Charriere*, an ingenious cutler of the metropolis.

"In the construction of these nipples, he uses ivory which has already been made soft and flexible by a process that has been long known: they are more solid and more durable than those hitherto employed. They are sufficiently resisting not to be flattened by the lips of the infant, and yet not too hard to fret and inconvenience them. They are easily kept clean by merely shaking them about in water, and with this simple precaution it will be found that they are not apt to communicate any unpleasant smell or taste to the milk. Besides, they can be readily attached to any sort of sucking dish or bottle, if the child is brought up by the hand and not suckled by the mother.

To preserve the flexibility of the prepared ivory, all that is necessary is to keep it from the contact of the air by placing the nipple under a glass, or by wrap-

ping it round with a damp cloth. In fact we (the reporters) think highly of these new contrivances, and already, we are told, they are extensively used both in public establishments and in private practice."

(We have observed in some of the recent French journals, that the prepared flexible-made ivory has been manufactured into bougies for the male urethra; but whether they possess any peculiar advantages we do not know.

Excellent artificial nipples are now made with prepared caoutchouc: they are entirely destitute of any unpleasant smell or taste, and have quite a fleshy feel to the lips when sucked with.—*Rev.*)

ON THE PRESERVATION OF BODIES FOR THE PURPOSES OF DISSECTION.

We are informed by Dr. *O'Shaugnessy* of Calcutta that since he has tried the practice of injecting bodies with a solution of arsenic—as recommended by Dr. *Tranchina* of Palermo, and Dr. *Dudley* of the U. S.—the study of anatomy has been pursued with greater ease on the banks of the Ganges than in London or Paris.

Dr. *Dujat*, of the *Ecole Pratique* in the latter metropolis, has for two years past adopted this plan, and reports very favourably of it, as affording by far the most efficient means of counteracting putrefaction. He says:—

..... "The brain, after several weeks, was as firm as it usually is in a post-mortem examination; and the pathological lesions of several organs retained all their accustomed appearances. The arm of a subject injected with the arsenical solution last March, (1839) was three months afterwards in a state of perfect preservation, and subsequently it was allowed to dry, the muscles retaining their usual dark red colour.

Even when putrefaction has commenced, the process will be arrested, and the decayed parts will recover much of their firmness and integrity, besides losing all their offensive odour. This process therefore affords a most convenient and effectual means of preserving pathological preparations when the weather is very hot or when we cannot put them up at the time. In preparing skeletons with their natural ligaments, as well also as the skins of animals, there is no antiseptic application so good as that of the arsenical solution."

Dr. *Dujat* seems not to have much fear that the employment of arsenic in this way is likely to prove at all poisonous to dissectors. "Indeed I am persuaded," says he, "that it renders the hands less liable to suffer from any wounds or punctures in dissection; for the minute quantity of arsenic that could be absorbed in this way can frighten only the homœopathist; and the experience of several anatomists in Paris, Calcutta, and at Lexington in America, has shewn that there is little or no danger."

The strength of the solution used for injection by Dr. D. is considerably weaker than that recommended by *Tranchina*: it is 125 grammes of the arsenious acid to 1½ kilogrammes (or 1500 grammes) of water. It may be injected into either one of the crural or of the carotid arteries. For ordinary dissections, one injection will be found sufficient; but when our object is to preserve a body for a great length of time, it should be repeated a second or even a third time.

The solution of arsenic is altogether preferable to that of corrosive sublimate, as this latter salt is apt to become decomposed, being converted into the proto-chloruret and ultimately into the metallic state.—*Journal de Chimie.*

Clinical Review.

WESTMINSTER OPHTHALMIC HOSPITAL.

CURE OF SQUINTING BY THE DIVISION OF ONE OF THE RECTI MUSCLES.

In our experience we remember nothing like the rage for dividing one of the recti muscles. The surgical world is brimfull of it. The first question that one surgeon asks another when they meet, is "Have you performed this operation?" Any one who has not done it is really an object of compassion. He stands alone, and people pity him or wonder at him. Poor Dr. Franz, who introduced the operation into London, was soon buried amongst the shoal of operators, and if he has since lifted his feeble voice, it has been lost amidst the din.

As the proceeding may now be viewed as an established one of approved benefit, of wide utility, and of such easy execution, as to admit of any surgeon's effecting it; as every one, in fact, who can operate at all ought to be able to operate here, we shall bring together *some* of the facts or the suggestions that have lately appeared in connexion with it.

I. THE HALF-YEARLY REPORT LAID BEFORE THE GOVERNORS OF THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, ON THE 25TH JULY, 1840. By CHARLES W. G. GUTHRIE, JUN.

We are greatly pleased to see Mr. Charles Guthrie appear upon the scene. He is a young surgeon of much promise, and bids fair to succeed to the honourable position so justly held by his able father. We wish him the success which we cannot doubt he will obtain.

Mr. Guthrie observes:—

"The operation was proposed by Dr. Stromeyer of Hanover, but was first practised by Dr. Dieffenbach of Berlin, in January last: and Mr. Pyper, a student, who had been recommended to the notice of the learned Professor by my father, and had assisted Dr. Dieffenbach in several of his operations, caused the necessary instruments to be made for him on his return to London in March, and pointed out the different steps of the operation as he had seen them performed. The first operation was done on the 18th of April, but the instruments have since been considerably modified, and the operation has been rendered more simple, so that it may be readily accomplished in less than one minute, with the greatest precision and safety on an adult, offering no resistance; I have done it in a great many instances in half a minute, and it has even been done by Mr. Guthrie in a few seconds by one introduction of the small curved knife. But this method is not safe, for the ball of the eye may be injured by any irregular motion of the patient, which did occur in one unruly boy, but neither in this nor in any other instance has any evil result, or more than slight inflammation, followed the operation in the eighty-four cases in which it has been done in this hospital or in private life, nor in others in which I have assisted; and in no case has it failed in overcoming the immediate evil."

The degree of power, says Mr. G. which the person possesses over the eyes is occasionally very doubtful on the first inspection of them; both eyes squinting in turn, or together, and it is only after a little delay that the really defective eye can be clearly ascertained; whilst in others the motions of the eye are altogether so irregular, and so little under control, that it becomes doubtful which muscle should be divided, or whether it would be proper to attempt any

operation at all. In most instances, persons have seen double for two or three days, or even for a longer time after the operation, but this gradually subsided in every instance, save one, as the axis of the affected eye began to correspond with that of the other. In the exception a slight cast can be perceived on a careful examination, so slight, however, as scarcely to be remarked. In one case the sound eye turns in more than the eye which has been operated upon, but vision is single. In four cases, the eyes seemed disposed to turn inwards again for a few days, but from this they eventually recovered. In one case it has been necessary to repeat the operation—in two a new pupil has been made—in almost all, vision has been in a greater or less degree gradually improved, although the amendment of the appearance has been in some the essential point gained. In a few cases, the sight of each eye appears to be equally good. In one case the eye turned, and continues turned a little outwards after the operation.

Operation on Children.—When a child under eight or ten years of age, or an unruly one who may be older, of which we have had one instance at seventeen, is the subject for operation, it must be secured in the same way as in the operation for cataract, by being laid on a narrow table and covered by a strong sheet, which ought to be tied firmly underneath. The head is to be placed on a pillow, and steadily held by a spare assistant, whilst another, if necessary, further secures the body; for children of four or five, are sometimes so strong, and resist so much after the operation has been begun, as to render it very difficult to complete it, unless perfectly mastered, when they become comparatively quiet. In the first case of this kind, the muscle was not divided, and the operation had to be repeated. The youngest child Mr. G. has operated on was two years and three months old, the two next youngest were four years old.

Operation on Adults.—"When a patient is an adult he may be placed in a high-backed chair with the head reclined. An assistant raises the upper lid in the gentlest manner, with the ordinary silver elevator used for the same purpose in cases of soft cataract in children, holding it with one hand nearly perpendicularly to the forehead, and desiring the patient to turn the eye *outwards* in a case of squinting *inwards*, fixes a strong double hook with the other hand into the tunica albuginea, through the conjunctival membrane a little distance from the cornea, in the middle line of the eye, or what is pedantically called its equator. The points of the hook are short that they may not enter, or scarcely enter, the sclerotic coat, but they are long enough to pierce the tunica albuginea, for if they only penetrate the conjunctival membrane, this slips, and they raise it from the ball and cause its elevation near the cornea, which delays the cure. The assistant must also take care that the elevator duly raises the lid and gently confines it against the edge of the orbit in such manner that it may not slip, nor allow the upper conjunctive fold or part of the internal portion of the lid to bulge out below it, which will be apt to occur unless it is carefully prevented, by holding the elevator in the manner directed. On the right eye the elevator is to be held in the left hand, the hook with the right, and vice versa. The operator (or an assistant) having depressed the under eyelid with the fore or second finger of the left hand, directs the assistant to draw the eyeball gently outwards with the hook, until the semilunar fold of the conjunctival membrane begins to yield to the traction, when it should be held perfectly steady on the middle line, the centre of the pupil being directly under the shaft of the hook. He then makes an incision nearly equidistant from the hook, and the edge of the semilunar fold, through the conjunctival and the cellular membrane which may intervene between it and the tendon of the rectus muscle, directly upwards and downwards and inwards towards the orbit. Some surgeons use a small straight knife for this

purpose, some a pair of scissors, in which case the conjunctival membrane may be raised by a pair of eye forceps at the semilunar valve, and the fold thus formed between it and the hook divided, but I generally cut through this part at once with a small curved knife, which is introduced under the conjunctiva, from below the line of the hook, the point being brought out upwards through the membrane, or with scissors convex on the lower edge, and cutting sharply up to the points which are blunt. The incision is to be enlarged if necessary to at least three-eighths of an inch in length, which exposes the tendon of the muscle going to be implanted into the outer or sclerotic coat, and which is made more distinct by the point of the knife or scissors whichever are used, or by the blunt end of the small, flat, curved and slightly grooved director, for which the knife is to be exchanged, and any blood which flows is to be taken up with a small piece of sponge. If the incision is made too close to the semilunar valve, the subjacent cellular membrane frequently becomes infiltrated with blood, and prevents the muscle from being seen, which does not occur when the incision is made at a greater distance from it, but this need not delay the operation. The curved director is now to be introduced by a gentle steady motion beneath the tendon, carrying it inwards rather deeply through the cellular and fatty membranes, so as to be passed under the muscular, as well as the tendinous part, which causes the eye to roll a little INWARDS: and which should not be prevented by holding the hook too firmly. The point is then to be raised by depressing the handle, when it will appear at the upper part of the incision, having the muscle on its grooved surface; and this elevation of the tendinous attachment of the muscle turns the eyeball OUTWARDS, so that the hook is, in fact, no longer necessary, and may be dispensed with after the first incision is made through the conjunctival membrane: and in very determined persons it may be dispensed with altogether. The director being now held in the left hand over the lower eyelid, the curved knife is to be run along the slightly marked groove of the director, and the muscle becoming tendinous is divided. The operation may be done throughout with the same pair of blunt ended curved scissors with which it was begun, the lower convex limb being gradually introduced under the muscle in the same manner and with the same precautions as the director. When the muscle is fully divided there is usually a small spurt of blood, which I consider a satisfactory sign, but which soon ceases to flow, and the eye is generally observed to turn a little outwards, but not always forcibly. The elevator should then be removed, when the upper eyelid falls, and the eye is to be sponged clean. The patient should now be desired to open the eye by raising the lid, and to turn the eye inwards; if he cannot do this the operation has been completed, but if he can do it in the slightest degree, the muscle or its lateral cellular or tendinous attachments have not been entirely divided, and the eye being again secured by the fore-finger or the elevator, the scissors are to be used, or the director is to be once more introduced, and the undivided part sought for and incised, when it will be found that the patient can no longer turn the eye inwards, and it is surprising how small a portion of attachment can do this, either on the under or upper part. In the earlier operations performed I was not aware of this circumstance, and in two cases in which a slight turn *inwards* re-appeared a fortnight after the operation, I attribute it to this portion of membrane, which in all probability adhered to the posterior end of the divided muscle. It may also effect this slight turn from its connexion either with the rectus superior above, or the inferior below, as the case may be. In three of the last cures performed the eyes would not turn outwards, although the sclerotic coat was rendered distinct to all present, for nearly three-eighths of an inch every way, which indeed ought always to be done to ensure success, and it was only by dividing the additional band of membrane or tendinous expansion I have alluded to in one case above, and in two below, that the operation was perfectly completed. The posterior cut end of the muscle is to be pushed backward by the director away from the other portion, and from

the ball of the eye, so that it may unite indirectly to the posterior part of the globe and not to its side, and the edges of the incision in the conjunctival membrane are to be adjusted by the end of the same instrument. The eyes are then to be closed, by a small pad and a bandage, passed around the head; the pad of the eye operated upon should be kept wet with cold water for the first twenty-four hours, and the eye closed for two or three days. These precautions are not absolutely necessary, but it is as well to observe them, and to apply a few leeches to the lower lid, if there should be any pain and swelling. The cut edges of the conjunctiva are prone to retract and swell and become elevated, whilst a small projection or growth takes place from the sub-conjunctival cellular membrane, which requires to be touched from time to time by the sulphate of copper, or the nitrate of silver, or even to be cut off with the curved scissors. The eye is bloodshot occasionally for some days. The operation is but a trivial one, and is not apparently very painful, although some persons complain of it much more than others, as is usual with all operations on the eye."

Such is the operation as it is now very generally performed.

Mr. Liston uses scissors, and holds the lower lid down with a spring tenaculum. This operation is rather longer, and certainly rougher than the common one.

There have been several proposals for simplifying the operation. Most of them refer to the specula. We shall notice one or two.

Mr. H. Attenburrow, of Nottingham, a very dexterous young surgeon, says:*

"The short-curved instrument I use for the upper eyelid, gently raising the tarsus with the fingers, and passing it underneath, so that the lid is completely supported, and may be raised at any time, if required, from the ball of the eye. The handle of the speculum lies on the patient's forehead. The longer instrument is applied in the same way to the inferior tarsus, and, from having its handle of a proper length (about seven or eight inches), the assistant's hand does not in the least interfere with the operator. With these specula I have been able to operate with ease on the most unruly children; and another advantage is, that the patient can be allowed to rest by removing the instrument in any stage of the operation. In making the specula, care should be taken to obtain a proper curvature of the hooked portion which is intended to hold the eyelid, as, on its malformation, great pain will result on its application; but any surgeon making the instrument had better apply it to his own eye, which will teach him the proper curvature. They are easily manufactured from copper wire, and the ends should be lacquered, which is effected by a spirit lamp."

In a note it is stated that—Coxeter of Grafton-street, Gower-street, has just invented a very simple and well-contrived apparatus for keeping down the lower lid without the aid of an assistant. It consists of a small speculum, by which the lower lid is held firmly, but gently downwards, and is retained in that position by means of a curved spring, fitted with a pad, which embraces the lower jaw.

Mr. Clay, of Manchester, has also invented a speculum. In general form and size it represents a teaspoon, having about one third of the extremity of the bowl removed by a semilunar cut; on the external surface it is less convex than a spoon; on the internal surface, that which is intended to be applied to the eye, it is concave and hollowed so as to fit the cornea and front of the globe, while the edges are thick to keep apart the eyelids. When placed in its position between the lids the inner angle of the eye is left uncovered, in consequence of the semilunar notch, and the surgeon is supposed to operate in the resulting space.

Mr. Adams proposes a knife of this sort:—it possesses all the properties

* Lancet, Sept. 12, 1840.

of a scalpel, namely, utility, effectiveness, and safety, in a smaller space than any other instrument with which I am acquainted that has been adopted for dividing the internal rectus muscle: the blade consists of two parts, a rounded portion, resembling the blunt part of a hernia knife, and a small flat sharp extremity, having a transverse cutting edge, which at one end terminates in a shoulder by uniting with a short sharp front edge, while its other extremity forms a point by meeting the back edge at right angles, so that we have the transverse effective part of the blade in immediate connection with the useful shoulder and point. The instrument described cannot be thrust into the eye by any sudden accidental resistance of the patient; and this safety is owing to the position of its straight cutting edge, which does not require any sharp part of the knife to be directed towards the globe of the eye during any moment of the operation: the muscle being slightly raised across the blunt hook, its fibres are divided transversely by the knife, its edges being directed towards the hook, but at right angles to it, so that the flat side of the blade is held towards the eye.*

But, after all, if we are to trust *Mr. D. O. Edwards*, these instruments are "all my eye." He, following the suggestions of *Mr. French*, does without them.

"The way in which I proceeded in all these was the following:—The patient was seated on a chair in a moderate light; an assistant standing behind covered the sound eye with one hand, and, with the other raised up the superior lid of the affected organ. The patient having been directed to turn the eye upwards and outwards, I snipped the conjunctiva at the under edge of the rectus, and passed a curved probe beneath the muscle: by depressing the handle of the probe the point was thrust forward, and appeared above the upper edge of the divided muscle, and by a cut of the scissors was enabled to emerge. The fibres were finally divided upon the probe.

The operation, thus abbreviated, consists of but three steps:—

First, the snipping of the conjunctiva.

Second, the introduction of the probe under the muscle.

Third, the cutting out of the probe.

The usual formidable notes of preparation are avoided. The probe which I employ consists of two stems placed parallel, at a distance sufficient for the point of the scissors to pass between. It is curved into a hook in the shape of a semicircle, of which the diameter is six lines. The pattern may be had at *Savigny's* or *Fergusson's*.†

Mr. Duffin, however, who informs us that he has operated *one hundred and seventy times*, and therefore ought to know something about it, laments the frequent failures which have happened, and thinks it not impossible that the operation may fall into disrepute. "When," says he, "it is imperfectly performed, a few fibres of the tendon, perhaps, or some apparently insignificant band of fibrous adhesion having escaped the scissors, the patient loses the power of turning the eye horizontally inwards, so as to bury the cornea in the nasal canthus to the same extent that he could do previously, and thus the inexperienced may be misled. If, in like manner, in his effort to accomplish this movement, it be found that the patient is still capable of directing the pupil either upwards or downwards, and only slightly inwards, we may rely upon it that the operation is incomplete, and that when the eye is left at rest, this modification of the original evil, will, in a minor degree, be found to persist. Now, the operator being satisfied, from the extent to which he may have laid bare the sclerótica, that he must have divided the whole of the tendon of the adductor, often erroneously concludes that this slight obliquity arises from sympathy, and that, in

* *Med. Gazette*, September 4, 1840.

† *Ibid*.

the course of time, it will entirely disappear. But unless we can imagine that the unsevered parts will gradually relax, or become elongated, it is impossible that the eyeball can ever emancipate itself thoroughly from its confined position. I have lately examined several cases that were operated upon, when this mode of relieving strabismus was first practised in this country, and do not find that time has thus far effected any amelioration, nor do I think it at all probable that further improvement will ever take place; but the contrary.

When the operation is complete in every respect, the patient is wholly incapable of directing the pupil of the eye beyond the centre of the orbit, either in a horizontal or oblique line.”*

When the eye can turn upwards and inwards, or downwards and inwards, it is probably because some tendinous or cellular attachments have been left undivided. They ought, therefore, to be perfectly severed.

MONTROSE LUNATIC ASYLUM.

1. ABOLITION OF RESTRAINT.

In a Report of the Directors of this institution for the year ending on the 1st of June, 1840, we find some remarks by the able superintendent, Dr. Poole, on a subject which is now attracting some attention—the abolition of restraint. Dr. Poole observes:—

“As the subject of *restraint* has been recently brought forward in a variety of publications—and especially by Mr. Gardiner Hill of Lincoln, who contends for its total abolition in the treatment of the insane—I conceive it my duty to add a general opinion to these remarks, and it may be delivered in few words. My judgment, founded on many years’ observation—and I shall make no pretensions to eminent humanity—is decidedly in favour of that gentleman’s views, as either leading to or connected with the safest, easiest, most effectual, and, therefore, the best, system of practice for the cure of the deranged. I concur also with him in maintaining that, to render the plan adequate for all desirable purposes, ‘several essential requisites must unite.’ These are well stated by him:—” 1. A suitable building must be provided, in an airy and open situation, with ground sufficient for several court-yards, gardens, and pleasure-grounds, commanding (if possible) a pleasing and extensive prospect. 2. There must be a proper classification of the patients, more *especially by night*. 3. There must be also a sufficient number of strong, tall, and active attendants, whose remuneration must be such as to secure persons of good character, and steady principle, to undertake their arduous duties. And 4. The house-surgeon must exercise an unremitting control and inspection, in order that the plan may never, under any circumstances whatever, be deviated from in the slightest degree.”†

* Med. Gazette, September 11, 1840.

† “Mr. Hill, in a foot note, most truly says:—‘Suicide under this system must be obviated by the constant attention of the house-surgeon to the proper classification of the patients *by night*. Those disposed to suicide should always be placed in an open dormitory under watch. *Nothing else can prevent suicide under any system whatever.*’ For my own part, I do not recollect a single instance of its having taken place *in company*; and I entertain a belief that those who are disposed to perpetrate self-destruction would be among the foremost to arrest the hands of others who attempted it. The following paragraph, taken from the *Morning Chronicle* of 3d June last, though brief, affords a striking illustration of the difficulty experienced, under ordinary arrangements, in preventing such horrid deeds:—

My regret is, that the essentials now enumerated do not everywhere co-exist, and that Montrose cannot be held up as fully exemplifying both their combination and their highly probable results. In the absence of some of them, accordingly, and at variance with my own creed, I must tolerate the occasional imposition of hand-cuffs, to prevent greater evils than they inflict. Mr. H., I am persuaded, would not blame me, under circumstances, for departing from the *true faith*, inasmuch as, *e. g.*, I pinioned one man, because, having an ulcerated leg, which needed poultices and ointments, he repeatedly tore off and actually swallowed them; or that, with a latitudinarianism not deemed heretical in a *pure* physician, I had another tucked down to bed till the turbulence of delirium tremens yielded to a potent opiate; or even that, with only one female attendant for twenty of her sex, I permit the temporary confinement of a couple of arms which would both reduce their possessor to nudity and dispense merciless blows on all around. While I make these admissions in behalf of Mr. Hill's proposition, I confess the apparent force of an objection—for such is virtually the meaning of certain queries—lately put by an intelligent reporter. 'Even allowing,' says he, 'the practicability of the measure (total abolition of restraint), whether it be humane and desirable, is a question that appears to be very problematical. If the mind of a patient can be subdued by the power of intimidation, so as to paralyze his efforts in the hour of maniacal paroxysms, would his condition be more happy, or his welfare more promoted, by being under the influence of terror? Is it better to enslave the mind than enchain the body? May there not be greater benevolence and sympathy in subjecting the members

'*Suicide of a female lunatic in Bedlam.*—Last evening, at seven o'clock, an inquest was held before Mr. Payne, in the board-room of Bethlem Hospital, St. George's Fields, on the body of Jane White, aged forty-five, a lunatic, who committed suicide by hanging. Harriet Broady, one of the female keepers, said, deceased came first under her notice on Monday evening, when, on account of her uncleanly habits, she was removed from her regular ward to a cell on the basement storey. Witness put her in a strait-waistcoat, and she appeared very restless and melancholy. Witness had no difficulty in putting on the strait-waistcoat, and shortly afterwards she was placed in her bed. Witness saw no more of her until between six and seven o'clock yesterday morning, when, on unlocking her cell door, she discovered her suspended by means of the strings of her strait-waistcoat from a piece of iron that fastened a pipe for carrying off the rain, a part of which pipe ran through the corner of the cell withinside of it. The house apothecary was instantly called, who cut down deceased, and pronounced her dead. By the Coroner: The waistcoat was put on properly, and secured in the usual manner, yet deceased contrived to get out of it. Deceased was also fastened down to her bed by a species of web-strapping, which she snapped asunder. By a Juror: It is usual to lock up refractory lunatics for ten or twelve hours together, and not to visit them during that period for fear of exciting still more their passions. Ann Thoms, another keeper, said, deceased had been under her care since February last, when she was first admitted from Stratford St. Mary's, Suffolk. She was always in a low desponding mood, and was esteemed the most inoffensive patient in all the hospital. Ann Powell, another nurse, said, the waistcoat was put on at her suggestion, after having reported the case to the matron. She was positive that the waistcoat was properly secured. The governor said that there had happened in the hospital only eight cases of suicide in the last twenty-five years, which was entirely owing to the extreme vigilance of the keepers, whom the patients were continually watching, to try and find an opportunity of destroying themselves. Verdict—Insanity.'

of the body to salutary restraint than in the exercise of a moral discipline which will ever appear to human feeling burdensome and oppressive?*

It will be observed that I used the phrase, 'apparent force.' In truth, there is nothing else presented by this extract. Mr. Hill might reply to it most cogently without abating one iota of that for which he contends, and simply because he would and must be among the very foremost to repudiate the assumed premises from which an inference opposed to his suggestion is deduced. To be brief, he does not argue for *terror*—neither does he mean to supersede bodily restraint by a *worse bondage of mind*. Moreover, it seems his deliberate conviction that the former, as usually practised, almost necessarily leads to, if not mainly operates by, the latter; and that, generally speaking, neither would be needed, if a moral discipline, not otherwise 'burdensome and oppressive' than is every check on violent passion, were more systematically exercised and more confidently trusted.

To conclude these observations—and the importance of the theme demands so many at least—while, in cases where intellect is totally suspended, as under the pressure of epilepsy, or in the rage of phrenitis, I should not hesitate a moment to guard against biting through the tongue by a wedge between the teeth, —or precipitation over a window by strapping down the limbs, the capability of reasoning, though in a very low degree, would be an argument with me for almost any species of mental influence as preferable to physical coercion. Imperfect as our classification may be reckoned, one immense benefit, I verily think, daily arises from it—if, so to speak, a negative can have a positive product—namely, that being, as it were, surrounded by an insuperable force—depending on the number of his associates, many of whom have the same tendencies to violence—each individual sees and feels, or, which is equal, imagines, that every outrage would be repressed instantaneously, and, consequently, worse than vain. Now, style this sort of influence 'the power of intimidation' or *terror*—suppose it to merit the name—and that it actually enslaves the mind—can I, ought I, to abandon it, at the sacrifice of peace, one of its obvious results, and have recourse, instead, to any mechanical devices whatever? My own answer is the stoutest—No. At the time when I entered on charge, the most dangerous patient in the house—a man deemed so ferocious and so filthy as to need perpetual hand-cuffing, with isolation from every living creature—was set at liberty by my direction. One of his first acts—he having been in the army—was to salute me *a la militaire*: he called me, shortly afterwards, an officer of his own regiment, and obeyed my commands accordingly: month by month did one or other human feeling acquire strength over his bad propensities: now he marches about for hours without molesting any one, causes no trouble to the Keeper, frequently converses very shrewdly, occasionally reads the Bible, and, though long ranked among the incurables, manifests faculties which my probably be cultivated into redemption from their grade. Another, equally unsafe at times, affects to be the guardian and protector of all who are feeble around him; and being, to a certain extent, entrusted with them, may often be seen officiating as a nurse—gently carrying one patient on his back to bed, washing and clothing a second, feeding a third, smiling and chattering to all. Yet, strange to say, as some may imagine, this is the very individual who, resenting the abstraction of an article confided to him, did not scruple a moment to punish the offender by an equally hearty blow. I might multiply instances in confirmation of the same principle; and it is incalculably cogent: Where judgment is not altoge-

* "Nineteenth Annual Report, &c. of the Dundee Royal Asylum, pp. 14, &c. My belief is, that, on coming to full mutual understanding of views, Mr. Hill and the Reporter, as well as myself, would be found essentially in concord."

ther destroyed, some portion of sympathy—the nucleus of moral character—may be reckoned on as co-existent with it; the treatment which a child receives from his parent is due to their possessor, and rarely fails, without odious allies, give them a triumph over the fiercest opponents.”

2. *Benefits of the Penny Postage.*

“ Among the hitherto unascertained though expected benefits of a diminished rate of postage charges, it is most agreeable and promising to all concerned, that an augmented interchange of reports and sentiments between the functionaries of Public Charitable Institutions has been experienced. No department of these is likely to be more advantaged by the facilities so afforded than lunatic asylums. Having already shared in the contributions thus promoted, I must express a desire that the managers will sanction similar returns on my part. They cannot do so without credit to their own charge, or aiding a cause appreciated by every true philanthropist.”

BETHLEM HOSPITAL.

REPORT OF THE COMMISSIONERS FOR INQUIRING INTO HOSPITALS.

We believe it must be admitted that great improvements do not always originate where the opportunities are greatest, nay, that into such favoured spots improvements sometimes penetrate with difficulty. Yet one would think that in the capital of this empire, where thought and action are practically more free than in any other country of the globe, our public institutions would be eager to catch and anxious to disseminate every spark, the very slightest, of advancing knowledge, and that nothing would be seen like a dogged adhesion to obsolete ideas and practices. The present condition of Bethlem Hospital would seem not to encourage these agreeable anticipations.

Mr. Martin has made, on the part of the Commissioners, a Report on this Institution, the conclusion of which we think it right to quote. We hope that the severe tone is not absolutely justified by the state of the case, yet we fear from what is mentioned in the body of the Report, that there is something like a foundation for it.

“The report is concluded by drawing comparisons between several parts of the system of management of the patients in Bethlem, with that adopted at other lunatic asylums, and especially those of Hanwell, St. Luke's, Lincoln, Glasgow, Nottingham, and Wakefield; and in all cases to the disadvantage of Bethlem. It is submitted that though to a casual visitor its perfect cleanliness, and the neatness of appearance and absence of all apparent restraint of the patients, might lead him to conclude that the management of lunatics has here attained perfection, yet there is still room for considerable improvement. Some of the defects in the present arrangement are, no doubt, to be attributed to the construction of the building, which appears to have been erected partly on the plan of the old hospital in Moorfields, with a view to the continuance of the coercive system there pursued, and is by no means well adapted to the present improved method of treatment. The aspect, it is said, is not good, the gallery windows facing to the north: the windows are too high from the floor, formerly more than six feet; the lower galleries ought not to be on a level with the earth, nor is there any necessity for stone floors in them. The centre of the building is obscured and made gloomy by a heavy useless portico, and the back is even more gloomy and repulsive than the front. The gloomy exterior of the hospital, and the heavy unsightly window-bars, savour strongly of the times of rigour and coercion; they are compared with great disadvantage with those in the

lunatic asylums at Lincoln and at Nottingham, which are like common windows to external appearance, but are secured from being opened more than a certain distance. It is to be considered as much to be regretted, that the governors should have consented to the erection of the wings for criminal patients, by which the patients were deprived of the space now devoted to the use of objects who could not have been in the contemplation of the citizens when the existing lease was granted. The criminals now enjoy a larger quantity of ground in proportion to their numbers than the ordinary patients. The whole of the land held by the hospital appears no more than sufficient for the wants of the patients, but a very small portion only is devoted to their use. The kitchen gardens and the two lawns might be at once used or made fit for use as airing grounds, and the present airing grounds, which are mere bare cheerless inclosures, might be planted and rendered far more agreeable than at present.

Within the house the most striking feature is the want of occupation for the men, the greater number of whom may be seen sauntering about the galleries in listless and hopeless indifference. Some, indeed, play in the airing grounds, and a few are occasionally employed in the lawns and gardens, or in knitting; but the only general occupation is that of pumping at the crank and capstan. At Wakefield, Nottingham, Hanwell, Glasgow, and many other places, on the contrary, the occupations are of the most varied kinds, and the patients are even taught trades with which they were before unacquainted, and are employed as black-smiths, weavers, shoe-makers, carpenters, tailors, &c. The intellectual employment also of the patients at Bethlem appears capable of great improvement: only a very small portion of them occupy themselves in reading, and it was stated by the matron that the women, do not in fact enjoy the use of the library. Personal restraint also, though so much less than formerly, is still considerably greater and more frequently employed than in many other asylums.

Other suggestions for improvement relate to the too great caution which is evidently displayed before the patients, in everything around them being distinctly adapted to prevent them from harming themselves or others; the absence of any medical school or system of pupillage, by which medical science might be advanced, at the same time that it would (as it does in the general hospitals) afford a constant stimulus to the exertions of the medical officers; the propriety of having a resident physician, with suitable assistants and a remunerating salary, or of making an increase in the number of physicians, and, perhaps, an addition of one or two ordinary practitioners to those who devote themselves chiefly to the cure of insanity; the necessity of a greater portion of statistical information being afforded by the annual reports; the propriety of relaxing some of the restrictions by which certain classes are at present disqualified from admission, as those against persons with venereal disease or itch; and the importance of shortening the period between the consideration of the petition and the admission of the patient. The remaining strictures upon the hospital relate to the financial department both of itself and Bridewell, (with which it is urged its union is no longer reasonable), and they are made with a degree of severity which is entirely absent in the corresponding remarks on the other hospitals.*

The Governors, if they would stand well with the public, ought to look to this.

* Med. Gazette, April 17, 1840.

ON THE ADVANTAGE OF STUDYING RARE CASES.*

We could hardly have expected that, in this incredulous age, a champion could have appeared in behoof of the rare and the marvellous. Yet so it is, and he has thrown down the gauntlet to the matter of fact men pretty boldly. M. Lordat is the gentleman, and his eulogy of "the rare and strange" is contained in an Introductory Lecture to a Course of Physiology.

When, says M. Lordat, the old University of Paris was suppressed, and the republican government substituted the *Ecole de Santé* for the *Faculté de Médecine*, the director, besides his official duties, was appointed to explain the doctrines of Hippocrates, and the history of rare cases; that is to say, the history of the extraordinary phenomena which have been observed at various periods in some individuals, whether belonging to anatomy or physiology. It appears, however, that he did not give a single lecture on the latter subject; and in the catalogue of professors in the Parisian faculty of medicine, we no longer find one whose office it is to explain rare cases.

For our own parts, we think both the "Faculty" and the Professor lucky in not having such an office to boast of. We certainly should not like the job of explaining rare cases. But allons.

On examining, continues M. Lordat, the question more nearly, however, it seems to me that all parts of the history of rare cases are not equally neglected; cases belonging to anatomy are studied, but those appertaining to physiology are passed over. Monstrosities, anomalies in the distribution of the blood-vessels, club-feet, imperforations, and remarkable pathological phenomena belonging to surgery, are carefully collected. If they are not the subject of a special lectureship, they do not lack celebrity; they re-echo in the Academies; they are described at length and commented on in the journals; and they have been long mentioned in lectures on surgery and anatomy, with which they have more or less connection. But it is not so with the singularities observed in the exercise of the vital force of man, without material alteration. The facts formerly taught in the schools, and published under the names of *casus rariores*, *historia medica admiranda*, or *praxis miranda*, are now unknown; and those which are still presented to us by nature are unnoted, disdained, and rejected with derision.

Why are two kinds of facts, which are equally singular, treated so differently? We see, on reflection, that they are derived from the same source; that congenital deformities or monstrosities are the effects of the same cause which produces the most singular transitory phenomena, namely, the variations which happen in human *dynamism*. How is it possible to think so much of one kind, and so entirely to undervalue the other?

The immediate or proximate cause of this general disposition is to be found in the preference given by the majority to material knowledge over intellectual notions. The presence of a permanent fact which strikes the senses absorbs the whole attention: its origin and cause are forgotten, while the observer is occupied in classing it, or employing it for some mechanical purpose. But a vital, fugitive, and extraordinary phenomenon is often noted by the skilful alone; it vanishes before a sufficient number of witnesses have been able to satisfy themselves of its reality, and make it sufficiently notorious. Since nothing visible remains of it, we can only investigate its relations, affinities, and causes; an intellectual labour which is very difficult, and is no longer the mode of the day.

The disregard of this study proceeds from the prevailing error of neglecting the theory of physis, and believing that the causes which we have seen are suffi-

* Med. Gaz. Sept. 18, 1840. From the Gazette Medicale.

cient to form a complete nosology. The majority of physicians have forgotten the necessary truth, that the number of things which the most busy practitioner has seen is infinitely smaller than the number of those which he has not seen. From this forgetfulness proceed the disuse of many doctrinal principles of a high order, the ignorance of many vital facts necessary to be known, contempt for the past in medicine, profound indifference for anthropologic erudition, a great desire to appear well-informed in rare cases of the anatomical kind, and an extreme wish to show oneself an *esprit fort* (incredulous) with respect to these singular phenomena in the domain of physiology, which we have not witnessed ourselves. Nay more, we now actually see men, otherwise estimable, who after applying the test of their senses, quite at their ease, to physiological phenomena differing from those with which they are familiar, seriously repeat what Fontanelle uttered as an epigram: "*Je l'ai vu, et je ne le crois pas.*"

We believe we can account for what puzzles M. Lordat. The physiological, and, indeed, the medical world has seen so many blunders and so many lies in reference to the extraordinary that it has grown sceptical. And it could not well grow wise without disbelieving half that is told. What then are we to do? Open our ears again to the physiological Pintos, who exist even at present and would bask in the sunshine of public credulity did it shine upon them? No, no M. Lordat, the time for all that is gone by, the spiritualisms and mysteries of transcendental philosophy will never take deep root with the children of this generation. A few hot visionaries or weak neophytes may be caught, but the majority like something substantial, appreciable, and satisfactory. They recollect homœopathy, animal magnetism, and those other collections of *rare cases*, which have proved so veritable and so instructive.

MERCER'S HOSPITAL, DUBLIN.

NEW INSTRUMENT FOR TAPPING.

Dr. Lendrick objects to the old trocar and canula, perhaps rather unkindly. Our contemporary* who states this, states also that the Doctor shewed the pupils a new instrument, made under his direction by Mr. Milliken, of Grafton-street. He stated that he was not aware of a similar plan having been resorted to. The instrument is the "exploring needle," on a large scale, as to breadth, being about three inches long, two lines and a half broad, and one line and a quarter deep. It has an oblique handle, like that of a gorget. There is a groove on the surface, and the extremity is lancet-shaped, with only two edges, extending not quite to the shoulders of the blade. The integuments may or may not be divided with a lancet, according to the wish of the operator. The instrument is introduced with great ease, and the penetration of the sac is at once known by the gush of fluid along the groove: the operator, who holds in his hand a catheter (No. 4 or 5,) nearly straight, and either of silver or elastic gum, immediately passes it along the groove, and its penetration of the sac is simultaneous with the withdrawal of the sharp instrument. The fluid is now allowed to flow through the catheter, pressure with a swathe being applied as the abdomen becomes flaccid. The whole operation may be performed without varying the position of the patient from the recumbent posture in bed. The wound is somewhat valvular. The operator ought to hold the trocar in one hand, and the catheter in the other. The introduction of the second is to be accompanied by

* Med. Gaz. Aug. 14, 1840.

the withdrawal of the first. Thus the aperture of the sac is at once hit off. One precaution is necessary to be attended to, if a gum catheter be used. After the stylet is withdrawn, the tube is liable to be compressed by the edge of the swathe, and the exit of the fluid impeded. The difficulty is overcome simply by removing the edge of the swathe from the orifice. It is preferable that the catheter should be furnished with two apertures.

We fancy the trocar and canula will have the best of it.

DREADNOUGHT HOSPITAL SHIP.

CONDITION OF AN ELBOW NEARLY THREE YEARS AFTER EXCISION OF THE JOINT.

Facts like the following, which shew the *ultimate* results of remedies are valuable, and, unfortunately, no less valuable than rare.

A man had the upper extremities of the ulna and the radius, and the lower extremity of the radius excised by Mr. Busk, the able surgeon of the Dreadnought, in November, 1837. About a year after the operation, the patient went to sea, and did his duty on board ship.

"He presented himself to me on the 6th of this month, when I had an opportunity of fully examining the condition of the limb. Before removing his clothes it required close observation to detect any difference between the limbs, and he stated that no one on board the vessel of which he had been mate for nearly twelve months was aware that he had any thing the matter with his arm. On baring the arms, however, there was considerable difference in their size, although the muscles of the right had much increased since I had seen him last. The affected arm was altogether smaller than the other, but was not otherwise at all deformed. The shape of the elbow was so little altered that any one not aware of the fact would hardly have been able to convince himself that the articulation had been removed. The arm could not be flexed to more than a right angle, but could be perfectly extended. There was no lateral motion. The motions of supination and pronation of the hand were perfect. He had no pain, and found only that the right arm was not as strong as the left. He had become very stout, and appeared to enjoy the most robust health."*

HOTEL DIEU.

BARBAROUS OPERATION FOR FISTULA, BY M. ROUX.

Dr. J. C. Hall, in a sensible paper on *Fistula Ani*, gives this account of M. Roux's operation for fistula. It is worthy the times of the Grand Monarque.

He, (M. Roux, *not* the Grand Monarque,) introduces a long piece of box-wood into the rectum, having its concavity towards the fistula. A silver director is then introduced along the fistulous track, and its end made to come in contact with the wooden gorget in the bowel. A long, strong, narrow sharp-pointed knife is then introduced along it, till it comes in contact with the piece of box-wood. The director is then withdrawn, and by keeping the point of the knife fixed upon the gorget, and withdrawing both together, all the parts between the fistula and the rectum are divided. This part of the operation completed, the

* Med. Gaz. July 24, 1840.

bistoury is exchanged for a scalpel, and all the hardened base is carefully dissected out. A thick long probe is then procured, having a button at one end; this is covered with charpie, smeared over with some yellow-looking ointment, and the wound crammed full of it to the bottom.*

GLASGOW ROYAL INFIRMARY AND LOCK HOSPITAL.

DANGERS FROM THE EXHIBITION OF THE IODIDE OF POTASSIUM.

Dr. Lawrie, physician to the above Institutions, relates several cases with the view of pointing out the dangerous consequences that may follow the use of the iodide of potassium. The cases we need not quote—the conclusions we may.

"It would appear," says he, "that the hydriodate of potash and iodide of starch are dangerous and uncertain remedies. I am, in my own mind, quite satisfied that they were the causes of death in cases 3d and 5th. Their uncertainty, in a remedial point of view, is even more to be lamented than their danger. If they were unsafe in large doses, and safe in small, or if the disease for which they are exhibited, or the constitution of our patient, had any definite influence on their poisonous effect, they might be used with comparative impunity. As yet, however, I know of no criterion by which we can judge beforehand of their probable effect; that the quantity exhibited is no guide, I am very certain. Case 3d had only taken one grain of the solid iodine twice daily for five days, when he died, while many of Dr. A. Buchanan's patients take *seventy-two* grains of iodine daily, in the same form, without any bad effects, for days and weeks together. Case 5th took five grains twice daily for a week, when she died; while Wm. M'Symont, æt. 50, Ward 7, with gangrene of the penis, took 3j. daily for eleven days, with apparently great benefit to his disease, and not one of its injurious effects. I have given it in double this dose, and known half an ounce given daily with impunity. I very much regret this danger and uncertainty. I consider hydriodate of potash as by far the best of our recent remedies, and have prescribed it more frequently than any other medicine. In future, however, I shall be more cautious in its employment. Every patient for whom it is prescribed should be frequently seen by his medical attendant, and should be warned to omit it whenever any of its constitutional effects appear. Case 5th teaches us to omit it when the papular eruption is profuse, and not to resume it. Swelling of the neck, hoarseness, and dyspnœa (cases 3d and 5th,) are most dangerous symptoms. For them I believe there is no remedy but tracheotomy, early performed, and on it I would place great reliance. Case 5th teaches us that delay is fatal; and I would not in any future case allow the state of the bronchial mucous membrane to deter me from its performance.

If the above observations are correct, it would further appear that these iodides exert their poisonous influence on the mucous membranes of the air passages, not as direct irritants, but indirectly through the circulation, in the form of acute inflammation. I have never seen them act as irritants to the gastro-intestinal mucous membranes, nor have I ever seen them produce emaciation, atrophy of the mammae and testicle, hectic, and those other symptoms described by various writers under the name *Iodinia*."†

We prescribe the iodide a good deal, and we cannot say that we ever saw much mischief from it. Slight salivation, and some irritation of the gastro-in-

* Med. Gaz. July 3, 1840.

† Ibid.

testinal mucous membrane we have seen—nothing more. But then we give it with caution—in moderate doses—not when there are, or have just been pyrexia or inflammatory symptoms—and we stop it when it disagrees.

PENNSYLVANIA HOSPITAL.

STATISTICAL ACCOUNT OF THE CASES OF AMPUTATION PERFORMED AT THE PENNSYLVANIA HOSPITAL, FROM JANUARY 1, 1838, to JANUARY 1, 1840.

The application of statistics to the great operations, is likely to be very serviceable. With what horror have we regarded lithotomy? It has been looked on as the most painful and fatal of operations. Yet it is not near so fatal as amputation, nor, perhaps, as most of the great operations.

Dr. Norris, one of the surgeons to the Pennsylvania Hospital, has published an account of the result of amputations performed in the institution. He alludes to a similar account published by Mr. Phillips, in the *Medical Gazette*. The number of cases collected by him is 640, embracing all cases, acute, chronic, and the results of violence which occurred in the practice of the persons by whom the returns were furnished within the period of four years. "Of these cases, 490 are reported cured, and 150 died, either in consequence of the operation or the progress of the disease, to rescue the patient from which, recourse was had to the operation."

Dr. Norris observes:—

"The necessity of extending any observations that may be made through a term of years, is strikingly shown by an inspection of the tables which I have made; in some years the mortality after these operations being very small, while in others, though a similar class of cases have come under notice, and been subjected in every way to similar influences and treatment, the mortality has been large. From the first of January, 1830, to the first of January, 1832, but one death took place out of eleven amputations made during that period, while from the first of January, 1832, to the first of January, 1834, one-half of those amputated died (seven out of fourteen), and in the next succeeding two years the mortality became still greater, eight out of fifteen terminating fatally. From 1836 to 1838, the mortality then strikingly decreased, the loss being only one-third (five out of fifteen) and by the accompanying table it will be seen that, from the first of January, 1838, to the first of January, 1840, there has been but a single death out of twenty-four amputations, seventeen successive operations having had a favourable termination. To assert that death after amputation is rare with us, would be warranted by the experience of the past two years, though undoubtedly it would be as far from giving a true idea of the danger of the operation, or of our average success, as to aver our ordinary results to be such as were had between the years 1834 and 1836."

For reasons which seem satisfactory, but which we need not state, Dr. Norris concludes that the success at the Pennsylvania Hospital represents sufficiently that in the other large hospitals of America. All those amputations performed within twenty-four hours after admission, are included under the head of immediate, the patient in such cases having been brought to the house soon after the receipt of his injury. With one exception, the common circular operation was performed, and the stumps were all dressed so as to procure union by the first intention. The ordinary mode of dressing, is first to bring the flaps together by means of three or four long strips of adhesive plaster, and after covering the lips of the wound with lint spread with cerate, to apply a small cushion of charpie over the extremity of the stump, and to secure the whole

with a bandage moderately tight. The first dressing was generally made on the third or fourth day, and repeated daily afterwards till cicatrization was complete.

Dr. Norris furnishes a table of the amputations performed in the hospital from January 1, 1838, to January 1, 1840. That table we need not introduce, but content ourselves with citing the results of the amputations in question, added to those of the eight previous years.

Of eighty amputations on 79 patients, performed during a term of ten years at the Pennsylvania Hospital, thirty-five were primary, of which twenty-four were cured and eleven died, four of the deaths occurring within the twenty-four hours immediately following it.

Twenty were secondary, of which thirteen were cured and seven died.

Twenty-five* were for the cure of chronic affections, of which twenty were cured and four died.

Thirty-two of the amputations were of the upper extremity, of which twenty-seven were cured and five died.

Forty-seven were of the lower extremity, of which thirty-one were cured and sixteen died.

Seven were amputations at the joints, of which four were cured and three died.

13	of the 79 operated on, were under 20 years of age, of whom 12 were cured, and 1 died.	
26	were between 20 and 30, of whom 19 were cured, and 7 died.	
22	were between 30 and 40, of whom 15 were cured, and 7 died.	
16	were between 40 and 50, of whom 9 were cured, and 7 died.	
2	were upwards of 50, of whom 2 were cured.	
79		57 22

The following are Dr. Norris's conclusions:—

1. That amputation† with us is to be regarded as an operation attended with much danger to the life of the individual, the mortality after it being one in 3.7.

2. That the chances of success after it are much greater in persons who have been for some time suffering from chronic diseases, than in those who have it done while in robust health, the mortality in the former class of cases being one in 6½, while in the latter it is one in 3.7.

3. That immediate amputations after injuries are less fatal than secondary operations, the mortality after the former being one in 3.7, while in the latter it is one in 2½.

4. That amputation of the lower extremity is much more fatal than that of the superior member, the mortality after the former being one in 2½, while in the last mentioned class of cases it is only one in 6½, and

5. That the danger increases with the age of the individual operated on.—*Amer. Journ. of Med. Sciences, May, 1840.*

* One double.

† The *great* amputations only, it will be recollected, are alluded to. No death has followed any of the amputations of fingers, or toes, which have been made in the hospital during the ten years past.

REPORT OF SURGICAL CASES TREATED DURING THE MONTHS OF JULY, AUGUST, SEPTEMBER, AND OCTOBER, 1839. By G. W. NORRIS, M.D. one of the Surgeons to the Hospital.*

FROM this Report we shall extract the more interesting cases.

I. UN-UNITED FRACTURE.

1. *Un-united Fracture of the Bones of the Fore-Arm of four weeks standing. Treatment by perfect rest and pressure—Cure.*—Henry Baldwin, a healthy boy, *ætat.* 12, was admitted July 31st. His mother stated that his accident had been produced by a fall four weeks previously, and that his arm had been attended to by a physician in the country. Upon examination the fracture was found to be near the middle of the fore-arm; neither of the bones had united, considerable deformity existed, from bending of the bones outwards, and the integument was slightly ulcerated over the projecting ulna. The fore-arm was secured to a splint extending from the elbow beyond the fingers, and as much pressure was made over the projecting fragments, as the patient was able to bear. At first the bandage was removed, and the pressure re-applied daily, and, after a short time, every second or third day. By the 20th of August, perfect union had taken place, and the limb had become much straighter. Pressure and the splint, however, were continued till the 4th of September, and on the 28th he was discharged perfectly well, and with a very slight deformity at the part.

2. *Un-united Fracture of the Femur of seven months standing—Treatment by rest and compression.*—Michael Ward, *ætat.* 50, and enjoying good general health, was admitted September 14th, with an un-united fracture of the femur. He states that he received his accident in the middle of last February, by the fall of a bank of earth upon the limb. His left femur was broken obliquely in its lower third, together with both bones of the leg of the same side a short distance below the knee. After a treatment of seven or eight weeks, with long splints (probably Desault's) he was suffered to get up and move about, the union of the bones of the leg being firm, though somewhat deformed, while the thigh was much deformed and un-united. In August he set out from Ohio for Philadelphia, and performed one-half the distance on foot, with the aid of crutches. On admission, the left limb was found to be two and a half inches shorter than that of the opposite side. The lower part of the thigh was enlarged, owing to a great mass of callus which had been thrown out around the seat of fracture, and was much bent outwards, the lower fragment being drawn to the outer side of the limb. When placed in the erect position, he was unable to bear any weight upon the limb, and upon attempting to do so the motion of the lower upon the upper fragment, was very evident both to the patient and observer. Strong extension had no effect in bringing down the limb to its natural length, and all that was proposed by the treatment was to produce union of the fragments, and, if possible, a diminution of the deformity, by rest and pressure, without attempting to remedy the shortening. For this purpose a roller was applied from the toes upwards, after which strong pressure was made over the projecting portions of bone by means of a bandage secured to a well padded long splint placed upon the inner side of the limb. This apparatus was continued until October 14th, the bandage being tightened every

* Amer. Journ. of Med. Sciences.

few days. At this date the limb was found to be free from swelling, and the deformity evidently less. Union also appeared to be firmer. The apparatus was re-applied, and in order to keep up as much pressure as the patient was able to bear, a tourniquet was applied immediately over the point of fracture. On the 31st of October the apparatus was removed for the purpose of accurate examination, and it was found that the limb was lengthened half an inch since the commencement of the treatment; that the deformity was less, apparently from absorption of a portion of the callus which had been deposited on the outer part of the limb, and that no motion could be discovered at the point of fracture, or any grating sensation perceived when the weight of the body was borne upon it.

Dr. Norris observes that, in the first case, the non-union was probably the result of the want of proper support and pressure—in the second case, of the same circumstances, in addition to the existence of a fracture of the leg. For, where more than one fracture exists in the same person, firm union may take place in one some time before it occurs in the other. Pressure and rest are best adapted to cases of no long duration, and to young persons. Dr. Norris prefers the tourniquet to other means.

II. RUPTURE OF THE LIGAMENT OF THE PATELLA.

James Hughes, *ætat.* 30, was admitted on the evening of July 13th, for an injury of the knee received a short time previously by a fall from a height of eight feet into a well. He states that his limb was strongly flexed at the time of the fall, and that he struck the ground with his knee. Though suffering great pain he was able to seize a rope which was lowered to him, and allow himself to be drawn up to the surface, but on attempting to rise upon his feet he found that he was unable to support himself on his left limb. He was immediately removed to the hospital, where upon examination by the resident surgeon, a hollow was observed over the knee which on first sight was supposed to result from fracture of the patella, and separation of the fragments, but which on close examination was seen to proceed from a rupture of the ligament of the patella and a consequent displacement of that bone upwards. On the next day, although there was swelling, Dr. Norris found a deep depression existing immediately above the tubercle of the tibia, and the patella drawn up to the extent of an inch and a half. This bone admitted of a much greater degree of lateral motion than that of the sound side, could be distinctly traced, and was found to be uninjured. The treatment consisted in extending the limb upon a splint, and applying a roller from the foot upwards, which was passed around the knee in such a manner as to draw down the patella towards the head of the tibia. The limb was then placed on an inclined plane, and cold applications applied over the knee. Nothing of great moment happened, and, on the 27th, the patient spontaneously left the house. The patella occupied its natural position, and a considerable hardness could be felt in the space between its lower edge and the tubercle of the tibia.

III. WOUND OF THE PALM OF THE HAND—SECONDARY HÆMORRHAGE—LIGATURE OF THE RADIAL ARTERY—RETURN OF HÆMORRHAGE—CURE BY PRESSURE.

H. L. farmer, admitted July 22. He states that four weeks since, he received a cut with the end of a scythe in the fleshy part of the palm about an inch below the end of the radius. The injury was followed by considerable hæmorrhage, which was arrested by means of pressure on the part. The wound from the

time of the accident gave no trouble, though it did not cicatrize, until eight days since, when considerable hæmorrhage took place from it. This was repeated at different times during the day, and the following morning he came to the city and applied to a surgeon, who in order to arrest it, secured the radial artery just above the wrist. After this he returned home and continued to do well until the night before his admission into the hospital, when the wound again bled profusely, and was only arrested by making very considerable pressure upon the wrist as well as over the wound. After admission, the pressure which had been hurriedly and irregularly applied, and which caused great pain, was removed, and the wound which was not above half an inch in length was sponged off, but no bleeding took place. The ligature upon the radial artery, had not yet separated; the incision made in order to secure it had not united, and its edges were much swollen and inflamed, as was also the back of the hand. Moderate pressure, by means of graduated compresses and a bandage, was made over the wound and lower part of the ulnar artery, and the hand and fore-arm were secured to a splint and elevated, and cold applied. Tinct. opii, gtt. xl. given, and absolute rest in bed enjoined.

On the 1st of August, the ligature separated from the radial artery; and, on the 7th, the wound was cicatrized, and the patient discharged.

Dr. Norris remarks that, in wounds of the arteries of the wrist or palm, if the wound be large and the ends of the vessel accessible, everybody admits that both ends should be tied. But, where those ends cannot well be got at, the practice is to secure the vessel above. "Where the case is recent, this method is mostly successful, but when any length of time has elapsed since the injury, particularly in wounds of the palm, where the anastomoses between the vessels are free, it very frequently fails, the hæmorrhage after a time returning by the inferior end of the vessel. The employment of graduated compression upon the vessels of the fore-arm as well as over the wound, was in the above case fully successful in preventing any return of the hæmorrhage, and is applicable to most similar instances, but in all cases in which this is trusted to, it should be recollected that to ensure success, the pressure must be well and evenly applied, and a state of perfect rest secured to the limbs by means of a splint: elevating the limb, too, is a most important matter where this method is pursued."

IV. DIFFICULTY OF DIAGNOSIS OF INJURIES ABOUT THE HIP-JOINT:

Dr. Norris relates several cases in which mistakes in diagnosis were committed. In one, disease of the hip-joint was mistaken for luxation—in a second, luxation for fracture—in a third, fracture was at first overlooked—in a fourth and fifth, the same error was committed. The cases themselves we need not detail—it will be enough to extract a few cautionary observations of Dr. Norris.

a. "The true nature of the injury in these cases is often more evident some hours or days after the receipt of the accident, than immediately after its occurrence, and I am inclined to think that the necessity of close *secondary* examinations, in all instances in which there is room for a doubt as to the nature of the injury, are not sufficiently insisted on. Had careful examinations of the first two of the above cases been made the day following the receipt of the injuries, it is hardly possible that their true natures would have been mistaken, and the symptoms of fracture in the third case were only detected after a lapse of some days, though this injury was at first suspected and the patient attentively examined. It is, however, more particularly where fractures may be suspected that these repeated examinations are demanded."

b. "The exact length of the limb on entrance, with the natural position of the foot and absence of any deformity, or crepitus, led to the supposition, in both of the above cases, despite the great pain suffered, that simple contusions only

of the part existed, and this idea was confirmed at the commencement of the attacks of mania a potu, upon seeing the men up and moving about the room; but after recovery from their attacks, the eversion of the foot led to an immediate examination, when the shortening was found to exist, which, in connexion with the symptom just mentioned, could only be caused by fracture of the neck of the bone. In both cases the fragments must have been interlocked in such a way as to have prevented any shortening or motion, and so remained till the delirium occurred, when the violent efforts made to use the limb, unlocked the parts, and permitted the lower fragment to be drawn upwards.

Previously to witnessing these cases we had believed it impossible for a patient with fracture of the neck of the femur to walk upon the limb: but upon examining the records of our science on this point, I find that similar instances are noted."

And he quotes Sabatier, Dessault, Dr. M'Tyer, Mr. Syme, and M. Malle.

V. CANCER OF THE BREAST IN A MALE.

A. C. æt. 61, admitted July 18. He states that fifteen years since, while in the act of loading a cart with wood, he was struck in the breast by a heavy log. Soon after this, a small lump, not much larger than a pea, was observed by him at the part, which was hard and apparently loose beneath the skin, and not painful. For some years this never increased; but during the last eight or ten years, when the part was at all pressed upon, or rubbed by his suspender, it would inflame—at times so much so as to induce him to apply a soft poultice to it, which always speedily removed it. During this period, too, it increased very slowly in size. At present the tumor is about the size of a small apple—is extremely hard, and in no way adherent to the parts beneath—is not painful when handled, and has a small and very superficial ulceration on its outer part. He states that the tumor attained the size which it now has during the last summer, and that the slight abrasion of its surface occurred three weeks since. The skin covering the tumor is in no way discoloured, and but a single lymphatic gland, immediately above it, can be discovered to be enlarged. General health good. On the 20th, the tumor was removed. On cutting into it, it was found to consist of a whitish shining mass, almost of the consistence of cartilage, which gave a crying sound when divided by the scalpel, and showed numerous white striated bands running from its centre into the surrounding cellular structure.

The wound was healed on the 18th of September.

VI. COMPOUND FRACTURE OF THE CRANIUM.

Dr. Norris relates two cases of this sort of injury—one that interests and always must interest surgeons, from the questions which its treatment involves.

Case 1.—J. F. æt. 16, admitted July 16, a. m. He had got entangled in a steam-engine, which had gradually forced his head up against a projecting bolt. This bolt, which was square at its projecting extremity, and measured three quarters of an inch on either side, entered the fore part of the head to the depth of an inch and a half. From this situation the workmen attempted to extricate him, but finding this impossible, separated the bolt, together with a heavy piece of iron to which it was attached, from the machinery, leaving it firmly fixed in the skull. Attempts were then again made, by the foreman of the shop, to remove the bolt, but without success, and a medical gentleman in the neighbourhood was sent for. The opening in the forehead was of such small extent that

it was found necessary to enlarge the wound in the soft parts slightly at its corners, and afterwards to turn the bolt until its angles corresponded to the corners of the wound before it could be withdrawn. Two or three small portions of bone, which had been driven in upon the brain, were removed after the withdrawal of the bolt. At the visit soon after his entrance into the hospital, the seat of injury was found to be at the anterior part of the frontal bone an inch above the orbital ridge, and a little to the left of the middle line. At this point a portion of brain, judged to be nearly equal in size to a large walnut, was protruding and much lacerated. The patient was sensible and complained of no pain; pupils natural; pulse slow and feeble; is unable to raise the right arm from the bed, though he is able to close his fingers feebly, and has perfect sensation in it; no paralysis of any other part of the body. A pledget of lint was applied to the wound, and ice-water to the forehead. The treatment was antiphlogistic, and we need not particularly specify it nor the symptoms in detail.

On the 3rd, the protruding portion of bone had in a great measure disappeared. The mind was little, if at all affected, nor was there fever to any amount. On the 5th, the wound had begun to suppurate. On the 9th, he could raise the right fore-arm from the bed. In a day or two, he began to complain of pain over the eyes, which he did, at intervals, subsequently. On the 19th, the paralysis had entirely left the arm and he was able to raise it completely from the bed. From this date up to the 18th of August, the patient continuing to do well, the wound presenting a healthy appearance, and cicatrization progressing slowly. On the evening of the day mentioned he was seized with a chill followed by fever, pain in the head and diarrhoea. But on that day (the 19th,) there was pain in the head and pyrexia. He was bled. On the 21st the discharge was in a much less quantity, and from this time up to the 30th, the day of his death, continued to be very trifling. A day or two previous to his death his memory was slightly affected, and he was observed to sleep sounder and more than he had previously done; no paralysis. Early on the morning of the 29th he was much as he had been on the previous day, but at mid-day was found to be in a state of profound stupor with the pupil of the right eye strongly contracted, while that of the left side was dilated. In this state he continued till early in the morning of the 30th, when he died.

Autopsy nine hours after death. The wound in the head was one and a half inches above the orbital ridge. A small piece of bone was driven in and pressing upon the brain. The dura mater around the wound was thickened and strongly adherent to the brain. The anterior lobe of the left hemisphere of the brain was of a bluish-yellow colour, softened and presenting evident fluctuation. The vessels of the pia mater were much injected; an abscess was found immediately beneath the dura mater at the point at which it was adherent to the brain, occupying the whole anterior lobe and filled with thick yellow pus—thought to amount to 3v. or 3vi. The walls of the abscess were lined by a thick false membrane of a grayish colour. The cerebral matter around it was of a light yellowish colour and softened. A portion of the internal table of the bone, about an inch and a quarter in length, was found driven in beneath the sound bone at the upper part of the wound, and at the side of it, a small fragment was found firmly attached to it. The opposite hemisphere of the brain presented the natural appearances; the ventricles were much distended with serum; the edges of the fractured bone were rounded off and perfectly smooth. No further examination was admitted by his friends.

Dr. Norris observes, that the above case is remarkable from the large size which the abscess had attained, as well as from the length of time the patient survived after the accident, free from all unpleasant symptoms. The knowledge that the loose portions of bone had been removed immediately after the accident

and the entire freedom from all symptoms of compression of the brain, were sufficient to prevent a resort to any operative procedure.

But we would observe, that from the circumstance of bone being driven in and pressing on the brain, this case is, pro tanto, evidence against the plan of letting compound fracture of the cranium, with depression, remain without operation. The principle of the latter is, that, so much mischief being done to the brain, a little more will probably do little harm, and, if it removes all sources of irritation, will probably do good.

Case 2.—W. M. aged 34, ostler, was admitted December 3, 1832, for compound fracture of the cranium with depression of the bone. His injury had been produced two hours before admission by a blow over the right side of the head with an axe. The wound in the scalp was four inches in length, and a fracture with some depression of the bone existed. The physician who saw him previous to admission, stated that a small portion of brain had escaped from the wound. He had lost a large quantity of blood, and had no symptom of compression of the brain, or uneasiness of any kind about his head. The lips of the wound were brought together with adhesive plaster, and cold was applied to his head.

Under a very rigid antiphlogistic treatment he did well till the 13th, when he was observed to sleep more than usual, and when aroused said that his head felt heavy and painful. No inflammation existed round the wound, which had partially united. Thin pus was discharged from it, and it had for some days previously been dressed with a poultice. Cups were applied to his temples and back of the neck, and he was purged with salts and put upon the use of nitrous powders. He stated that some relief had been afforded him by the cupping, though on the 14th he complained of his head being still heavy, and slept a great deal and heavily. His pulse had become slower (60); skin dry and warm. The 15th, he was more stupid, and complained of pain across his forehead. *Head shaved and blistered—saline solution.* By the 20th the blister was healed, and the pain in the head was gone.

On the 22nd, it was discovered that he had not complete power over his left arm. Yet he continued to improve from this date till the 8th of January, 1833, when he complained of pain in his forehead, for which he was cupped and purged with relief. By this time he had completely regained the use of the left side.

On the 9th he had a return of the pain, and he again lost the use of the left arm. The pain was again removed by cupping and purging, and two days after he had partially regained the use of the member.

On the 16th a piece of the outer table of the bone, an inch in length, was found to be loose within the opening, and was removed.

On the 23d he was suffered to walk about the ward, and had his diet slightly increased; the wound had healed with the exception of a fistulous orifice leading to the seat of fracture. His mind was perfect; he suffered no pain, but had only an imperfect use of the arm of the left side.

He continued, as at the last report, until the 26th of March, when he was seized suddenly with a convulsion; for this, cupping and cold to the head were again resorted to with relief. The fistulous opening still remained, from which there was daily a discharge of pus.

In consequence of this attack, it was judged proper to cut down to the bone and ascertain whether or not any fragment pressed upon the brain; this was accordingly done, but no projecting portion was discovered. No material change took place from this time till the 2nd of April, when he complained of headache, which was in a short time followed by vomiting, insensibility and death on the same day.

Upon examination, eighteen hours after death, it was found that the internal table of the fractured portion of bone had been driven under the sound bone, and had become firmly adherent to it; and that an abscess occupying the greatest portion of the anterior and middle lobes of the brain, existed on the right side of the head, communicating with the external wound and lateral ventricle.

As Dr. Norris observes, this case shews the necessity of caution in prognosis and in treatment after injuries of the head.

MASSACHUSETTS GENERAL HOSPITAL.

STATISTICS OF THE AMPUTATIONS OF LARGE LIMBS.*

The report from which we draw the following particulars is from the pen of Dr. Hayward, one of the surgeons to the hospital.

Dr. Hayward well observes, that the fatality of amputations has taken people by surprise. More than one-half of the amputated die in the Parisian hospitals; and of fifty-five so operated on in the Pennsylvania Hospital, twenty-one died. Amputation is, therefore, a serious evil, and should not be lightly had recourse to.

The results at the Massachusetts Hospital were somewhat more favourable than those at the Paris, and Pennsylvania Hospitals above referred to. In a large proportion of the following cases, the amputation was done by the circular incision; the flap operation was adopted occasionally, whenever there was reason to believe that a better stump could be made by it than by the other method. The dressings were always of a light and simple kind; consisting of two or three strips of adhesive plaster and a small compress and roller; and yet there are some surgeons of the present day, who would perhaps regard these as more cumbersome than was necessary.

If the bleeding was slight, the dressings were applied before the patient left the operating room; but if there was any thing more than an oozing from the veins, it was deferred till a few hours after.

Secondary hæmorrhage was not frequent, though it sometimes occurred; pressure was generally sufficient to arrest it, but occasionally it was found necessary to open the stump, and tie one or more vessels. In one case where hæmorrhage occurred twelve days after the operation, from a diseased state of the posterior tibial artery, the femoral artery was tied. No one who had secondary hæmorrhage died, and though it sometimes debilitated the patient, in no case was there any permanently injurious effect from it.

In all the cases it was attempted to heal the wound by the first intention, and in a few instances it was completely successful, but in by far the greater number it was only partially so.

It has not been the usual practice at the Massachusetts Hospital to administer an opiate before an operation, though in a few instances it has been done. In one case where amputation was performed on a patient with delirium tremens, twelve grains of opium were given shortly before the operation; he became drowsy soon after and recovered.

Dr. Hayward subjoins a table of the amputations performed in the hospital. This is too long for insertion, and we may content ourselves with presenting the summary.

* Amer. Med. Journ. May, 1840.

There were seventy operations on sixty-seven patients ; three patients having two limbs removed. In one of these three cases, one operation was above and the other below the knee, and in the other two, both operations were below ; the first patient died, and the other two did well.

Of the whole number operated on, fifteen died and the remainder recovered, at least so far as to be able to leave the hospital ; though it is probable that in some instances the disease may have returned.

There were thirty-four patients who had the thigh amputated, and one of these had the other leg taken off at the same time below the knee ; of this number, nine died. Of twenty-three patients whose legs were amputated below the knee, two having both legs removed, five died ; and of the ten who had an arm amputated, six below and four above the elbow, one died.

This goes to confirm the prevailing opinion among surgeons, that amputation of the lower extremities is more often followed by fatal consequences than that of the upper, and that death takes place more frequently after amputation of the thigh, than after that of the leg. More than a quarter of those whose thighs were amputated died, while there was but little more than one death in five among those whose legs were removed below the knee, and only one of the ten whose arms were amputated. This patient too died of delirium tremens. The operation to be sure did not arrest the disease, but apparently contributed nothing to the fatal result.

This table tends also to support the opinions, that patients who undergo amputation for chronic diseases are much more likely to recover than those in whom it is performed in consequence of recent accidents. Of the first class, there were forty-five patients afflicted with various diseases, and of this number all recovered but six ; and of the remaining twenty-two, whose limbs were removed on account of recent injuries, no less than ten died ; being nearly half of the latter and less than one in seven in the former.

This fact certainly gives support to the opinion, that a state of high health is not favourable to surgical operations ; and it also tends to show that death after amputation is not by any means attributable in all cases to the operation alone ; for if it were, the proportion of deaths should be as large among one class of patients as among the other.

Dr. Hayward thinks that the result is affected, not only by age and constitution, but by the period at which the operation is performed. He thinks that, in recent cases, it is often done where it might have been avoided—and, in chronic cases, avoided or deferred where it ought to have been done, the patient being allowed to sink into an irremediable condition. He is against operating while the system is under the influence of shock—reaction should occur.

With regard to the ages of the patients operated on, it appears that there were

		Under 20 years of age 13, of this number 1 died.			
Over 20 and not exceeding 30		31,		8	"
" 30	" 40	" 9,	"	3	"
" 40	" 50	" 10,	"	2	"
" 50	" 60	" 3,	"	1	"
	Over 70	" 1,	"	0	"

Whole number, 67. No. of deaths, 15.

Spirit of the British and American Periodicals, &c.

SOME PATHOLOGICAL FACTS.

IN our Dublin contemporary* we have a full report of the Proceedings of the Pathological Society of Dublin—a very excellent society, whose meetings are attended by distinguished men, and enriched by valuable facts. Of the latter we shall cull the more important.

1. *Precautions in Operating for Empyema.*—Speaking of a case of empyema, Dr. Corrigan observed that the phenomena which attend the formation of matter externally are very apt to prove deceptive. The opening by which the fluid in the cavity of the pleura escapes in the first instance, is often very small, so small indeed, that it will barely admit the introduction of a probe, while the matter in the cellular tissue beneath the skin is often in very considerable quantity. The fluid which escapes from the pleural sac creates and keeps up irritation, and hence the quantity of pus in the external abscess is sometimes much greater than one would expect. When an incision is made, a large quantity of matter flows out, and the operator thinks he has made a sufficiently large opening. The lapse of four-and-twenty hours is sufficient to convince him of his mistake; the matter now either trickles out very slowly, or perhaps stops altogether, and continues so until a fresh opening is made. Dr. Corrigan said he mentioned this as a practical fact. In all cases of this kind, it is necessary to open, not only the external abscess, but also to take care, that the matter of the empyema has a ready mode of exit.

2. *Traumatic Emphysema without Laceration of the Pleura, or Fracture of the Ribs.*—A strong man was run over by the mail. On admission into the Richmond Hospital he had intense dyspnoea, with the usual symptoms which accompany internal hæmorrhage; there was also slight cough, but he did not spit any blood. All the muscles of the chest, abdomen, and neck were thrown into the most violent action, and the dyspnoea under which he laboured was frightful. His pulse was about 96, weak, and failing; his face pale and livid; his extremities cold. At the root of the neck there was a large tumor, which was found to be produced by effusion of air into the cellular substance, constituting subcutaneous emphysema; the whole of the anterior, lateral, and posterior parts of the chest became subsequently inflated. He died about three-quarters of an hour after admission. On dissection, the right lung was found as compressed as in an old emphysema, by an enormous quantity of air in the cavity of the pleura. There was a large quantity of extravasated blood lying about the roots of the great vessels and primary branches of the aorta. There were three different lacerations in the substance of the lung on the right side, but not on the left; the lung of the left side presenting nothing except a considerable degree of sanguineous engorgement. The pleurae on both sides were quite uninjured, and there was no fracture of the ribs. The chief alterations consequent on the injury were emphysema of the neck and trunk, effusion of air into the right cavity of the pleura, causing very remarkable compression of the lung, laceration of the right lung, with extravasation of blood about the roots of the great vessels, and congestion of the left lung. The most singular circumstance connected with

* Dublin Journal, September, 1840.

the case was the occurrence of such extensive laceration of the lung without rupture of the pleura, or fracture of the ribs. These parts were examined with great care, but no solution of continuity could be discovered. The effused air had first passed into the mediastinum, and subsequently into the cellular tissue of the neck and trunk. This was the fourth case of rupture of the lung, without fracture of the rib, which Mr. Smith had witnessed. The first case was that of a woman who had met with a severe accident, and in whom this condition was discovered after death. The next case was that of a dog which was killed near the Richmond Hospital, by a car passing over its body. Mr. Smith examined the body shortly after the accident, and found that, although there was not a single rib fractured, the pericardium was torn in various directions, and the lung extensively lacerated. The last case was that of a man brought into Jervis-street Hospital, who had general emphysema and rupture of the lung, without any injury of the ribs or pleura.

3. *Softening of both Lobes of the Cerebellum—Symptoms.*—Our readers are aware of the uncertainty that obtains in reference to the functions of the cerebellum. It is thought to be a regulator of motion, and to be connected with the venereal passion. The following facts do not seem to lend much confirmation to either notion.

The subject of the case was a young woman, æt. 26, unmarried, and who enjoyed perfect health until three months before her death, when she was attacked with intense headache, not referred to any particular part of the head, and accompanied by sickness of the stomach in the morning. When she applied at St. Vincent's Hospital, she was almost completely amaurotic, and had double vision, which continued until her death: her headache was intense, but intermitting: she suffered greatly from globus hystericus. Previous to her admission into the hospital, she had undergone a course of mercury; and while in hospital, she was again salivated with temporary benefit: under the use of mercury her pulse fell from about 90 to 72; and for some time her febrile symptoms underwent a marked improvement. She had no paralysis during the whole course of the disease; the prominent symptoms were intense, but not constant headache, globus hystericus, double vision, amaurosis, and strabismus. She died rather suddenly about three months after the first appearance of her symptoms. Upon examination after death, the anatomical characters of chronic inflammation of the membranes of the brain were found, and both lobes of the cerebellum were softened nearly throughout their whole extent, and of a pale rose colour.

4. *Flaccid state of the Heart in Fever.*—Dr. Stokes has observed that, in certain cases of typhus, the sounds of the heart are greatly diminished, so that one or both become more or less indistinct. In such cases, he has stated that there is a specific change, or softening of the heart's substance. Dr. Graves exhibited the heart of a man labouring under typhus without maculæ. He was admitted into the Meath Hospital on the fourteenth day of his illness. It would be unnecessary to give any detail of the symptoms, further than to state, that on admission his pulse was strong and dicrotous, continued so for some days, and did not lose this character until five or six days before death. He died on the thirty-third day of fever. During the course of the disease, the chief symptoms were a dry tongue, dicrotous pulse, general bronchitis, with congestion of the lung, and diarrhœa. Some thought that one of the sounds of the heart was inaudible; but this was dubious. The man died on the thirty-third day of the fever. There was a general flaccidity of the heart, but no evident specific softening of its substance.

5. *Co-existence of Scirrhus of the Pylorus and Tubercles of the Lungs.*—Mr.

Smith presented the recent parts in this case, one of the lungs contained a tubercular cavity, which had evidently existed for a considerable time, and several scattered groups of tubercles were found in both lungs. Along the lesser curvature of the stomach, and completely encircling the pylorus, there was a large cancerous ulcer, the surface and circumference of which presented numerous fungous growths, the mesenteric glands were much enlarged, and filled with a white, cheesy matter, of a scrofulous character.

Similar cases have been mentioned by Bayle.

6. *Is Bright's Kidney the cause of Albuminous Urine?*—Dr. Graves exhibited a case of granular kidney, and detailed the particulars of the case. The Reporter states:—A question then arose, whether that state of the kidney termed "Bright's kidney" was the cause of albuminous urine, or whether it was to be looked upon in an opposite point of view, and regarded as the consequence. Dr. Graves said he was inclined to adopt the latter opinion for various reasons. He had seen so many persons cured of albuminous urine under various circumstances, that he should hesitate in ascribing this condition to a permanently disorganized state of the kidneys. A remarkable instance of this occurred in the person of Staff Surgeon Finnie, Surgeon to the Military School at the Park; about six months ago he was attacked with pleuro-pneumonia of the left lung, of a very severe character, and speedily followed by anasarca. About the time the anasarca was making its appearance, his urine became highly albuminous, and continued so for nearly six weeks. About the time when the pectoral symptoms were about to yield to treatment, the anasarca and ascites began to disappear, and at the same time the urine began to lose its albuminous character. In this case the pectoral symptoms were so severe, that for some time Dr. Graves indulged but faint hopes of his recovery. The antiphlogistic treatment pushed to its furthest extent, mercury to salivation, and repeated and powerful vesication succeeded in removing the disease, and with it all trace of albumen in the urine. The case occurred about six months ago, and the gentleman has remained quite well ever since, and without manifesting any symptoms whatever of a return to the albuminous diathesis.

It should be borne in mind, that in the dropsical diathesis there is a tendency to the secretion of water loaded with albumen, not only in the kidney, but also into the cellular membrane and serous cavities. It is rather difficult to conceive, that when the general system takes on this diseased action, the kidneys should be exempt, or that the kidneys should become affected with organic disease, in order to pour out albumen, while other tissues and organs can assume the same function without any structural alteration. Why should the kidneys alone become changed, while other parts retain their organic constitution? Dr. Graves said that he thought a few observations on this point would not be out of place. The Profession were in general aware, that modern discoveries have shown that the cortical portion of the kidney consists of an immense number of very minute tubes convoluted on each other, blending, and lying in apposition with the ultimate ramifications of the arterial capillaries, through the parietes of which the urine is separated from the blood, making its first appearance in the minute tubes of the cortical substance. Now what are the chief constituents of urine? water, salts, and various acids, as the phosphoric, nitric, &c. Now if the nascent principles of the urine are secreted into these minute tubes in company with nascent albumen, the latter will be inevitably coagulated by some of the above-mentioned acids, and if this process be often and continually repeated, it is not surely a very improbable result, that these tubes may ultimately become filled with coagulated albumen, a fact observed by Valentin.

We quite agree with Dr. Graves that albumen in the urine is not necessarily indicative of serious disorganization of the kidneys. Every physician and surgeon must see cases of albuminous urine cured. But, whilst we allow this we

must say that, in the great majority of instances, the symptom must be deemed a serious one, and, probably, the sign of that state of kidney which will end in organic alteration—a state akin to an inflammatory one.

7. *State of the Lungs in Hooping-cough.*—A child died of hooping-cough, following bronchitis. The right lung was chiefly affected. It had occupied more than its natural share of the cavity of the thorax, and had pushed the opposite lung towards the left side. It exhibited subpleural vesicles, and other evidences of emphysema; but the most remarkable circumstance connected with it was the existence of pneumonic inflammation affecting not the central portion of the lung, but merely the margins in which the induration of the pulmonary tissue was obvious.

8. *True Aneurysm of the common Iliac Artery, opening into the common Iliac Vein.*—Mr. Adams exhibited a specimen which bore some resemblance to the case recorded by Mr. Symes. It was a fusiform dilatation of the common iliac artery, with a communication between it and the common iliac vein. It appeared to be of several years standing, and to have caused the patient a good deal of distress. Some time ago he fainted while walking, and was carried home in a state of syncope, and died shortly afterwards. He had for a long time before death noticed a tumor, attended with a purring sensation in the lower part of the abdomen on the right side. On examination after death, Mr. Adams discovered a fusiform dilatation of the common iliac artery, and on one side of it there was a small opening about the size of a goose-quill, by which it communicated with the corresponding vein. Mr. Adams said he had examined the interior of the artery at the dilated portion, and could not find any solution of continuity in the lining membrane, except when the sac had opened into the iliac vein. He was therefore induced to look upon the preparation as being in the first instance a specimen of true fusiform aneurysm, and secondly, as affording an instance of spontaneous varicose aneurysm.

MR. SMITH ON THE DIAGNOSIS AND PATHOLOGY OF FRACTURES OF THE NECK OF THE FEMUR.

One of the most remarkable memoirs we have lately read, is by Mr. Robert William Smith, lecturer on surgery at the Richmond Hospital School of Medicine, on Fractures of the Neck of the Femur. It is contained in the number of the Dublin Journal for September, 1840, and will amply repay the perusal of the surgeon. The memoir itself occupies seventy pages, and we must refer those who would become acquainted with the subject in detail, to it. We can do no more than present the conclusions which Mr. Smith draws from the facts. These consist in the post-mortem examination of fifty specimens of fracture of the neck of the femur, forty-two of which he relates. He deduces, then, the following conclusions:—

1. A slight degree of shortening, removable by the extension of the limb, indicates a fracture within the capsular ligament.
2. The degree of shortening, where the fracture is within the capsular ligament, varies from a quarter of an inch to one inch, or one inch and a half.
3. The degree of shortening, when the fracture is within the capsule, varies chiefly according to the extent of laceration of the fibro-synovial folds which invest the neck of the femur.
4. In some cases of intracapsular fracture the injury is not immediately followed by shortening of the limb.

5. This absence of shortening is generally owing to the integrity of the fibro-synovial folds.

6. In such cases the retraction of the limb may occur suddenly, many weeks after the receipt of the injury.

7. This sudden retraction of the limb, which indicates a fracture within the capsule, is, in general, to be ascribed to the accidental laceration of the fibro-synovial folds.

8. The degree of shortening, when the fracture is external to the capsule and not impacted, varies from one inch or one inch and a half to two inches or two inches and a half.

9. When a great degree of shortening occurs immediately after the receipt of the injury, we usually find a comminuted fracture external to the capsule.

10. The extracapsular fracture is generally accompanied by fracture with displacement of one or both trochanters.

11. The intracapsular *impacted* fracture is generally accompanied by fracture without displacement of one or both trochanters.

12. In such cases the fracture of the processes unites more readily than that of the cervix.

13. The degree of shortening, when the fracture is impacted, varies from a quarter of an inch to one inch and a half.

14. The exuberant growths of bone met with in these cases have been by many erroneously considered to be merely for the purpose of supporting the acetabulum and the neck of the femur.

15. The difficulty of ascertaining crepitus, and of restoring the limb to its natural length are the chief diagnostic signs of the impacted fracture.

16. The position of the foot is as much influenced by the obliquity of the fracture and the relative position of the fragments, as by the action of the muscles.

17. Inversion of the foot may occur in the intracapsular, extracapsular, or impacted fracture of the neck of the femur.

18. When in the intracapsular fracture the lower fragment is placed in front of the upper, the foot is usually inverted.

19. When in the extracapsular fracture with impaction, the superior is driven into the inferior fragment, so as to leave the greater portion of the latter in front of the former, the foot is generally inverted.

20. In cases of comminuted extracapsular fracture without impaction, but with separation and displacement of the trochanters, the foot may be turned either inwards or outwards, and will generally remain in whatever position it has been accidentally placed.

21. The consolidation by bone of the intracapsular fracture is most likely to occur, when the fracture is also impacted.

22. Severe contusion of the hip-joint, causing paralysis of the muscles which surround the articulation, is liable to be confounded with fracture of the neck of the femur.

23. The presence of chronic rheumatic arthritis may not only lead us to suppose that a fracture exists when the bone is entire, but also when there is no doubt as to the existence of fracture, may render diagnosis difficult as to the seat of the injury with respect to the capsule.

24. Severe contusion of the hip-joint, previously the seat of chronic rheumatic arthritis, and the impacted fracture of the neck of the femur, are the two cases most liable to be confounded with each other.

25. Each particular symptom of fracture of the neck of the femur, separately considered, must be looked upon as equivocal: the union of all can alone lead to correct diagnosis.

MR. DONOVAN ON THE HYDROCYANOFERRATE OF QUININA.*

This salt has been brought forward by Signior Bertozzi, of Cremona, as a substitute for sulphate of quina, where that fails. Doctors Zaccarelli and Carioli have confirmed his statements and anticipations. Mr. Donovan gives directions for procuring the salt, for which we must refer to our contemporary.

The hydrocyanoferrate of quina, when in small fragments, is of a pea-green colour; its taste is intensely bitter; it dissolves in cold, but better in hot alcohol, and is precipitated almost entirely from the solution by water. In prescription, it would be an error to promote its solution in water by means of dilute sulphuric acid, as is done in the case of sulphate of quina; the salt would be decomposed by this acid, and the solution would become blue. It ought not to be prescribed with tincture of cinchona, and consequently not with infusion or decoction. The dose given by Doctor Zaccarelli, was equal to three grains and a half troy, repeated according to necessity.

Although this febrifuge is precipitated by water from its alcoholic solutions, it separates in the state of so fine a powder, and remains so long suspended, that it will answer for exhibition very well in this state. The following formula will be found convenient:

℞ Hydrocyanoferratis quinae grana quatuor,
Spiritus rectificati drachmam. Solve.

Adde aquae, vel

Misturae camphoratae drachmas septem. Misce fiat haustus,
ut res nata sit, phialâ prius agitata, sumendus.

In pills

℞ Hydrocyanoferratis quinae grana viginti quatuor,
Mucilaginis gummi Arabici q. s.

fiat massa quam divide in pilulas duodecim.

These pills will be of a proper size, and two of them will constitute a dose; to be repeated according to the discretion of the prescriber.

Mr. Donovan thinks the liquid form the better. He recommends, and so do we, the medicine to the profession.

MR. DONOVAN ON COD-OIL.†

It appears that cod-oil has been a good deal used, of late, in France and Germany, in certain scrofulous cases. They say that when properly administered cod-oil cures scrofula of the bones, marasmus, and chronic arthritis of a scrofulous or rheumatic form. Caries, accompanied by a sore and swelling of the soft parts, requires the treatment with oil to be seconded by local applications, such as compression, and ioduretted alcoholic fomentations, cod-oil is of no avail against gouty arthritis, or swelling of any lymphatic glands but those of the abdominal cavity; its action seems doubtful or null in scrofulous phthisis when at all advanced. To produce advantageous results, in any disease, the use of cod-oil must be persevered in for several months, in doses of three or four table-spoonfuls daily.

Now, if this be all true, cod-oil is no bad thing, and it would be well to have it as good as can be got. Perhaps it should *not* taste exactly like train-oil, as that might make one sick, if it did nothing else. So Mr. Donovan has perfected the process for its preparation, and made cod-oil a very respectable oil to take.

* Dublin Journal, July 1, 1840.

† Ibid.

Take, says he, any quantity of livers of cod, throw them into a very clean iron pot, and place it on a slow fire, stir them continually until they break down into a kind of pulp: water and oil will have separated. When a thermometer plunged in the pulp will have risen to 192° , the pot should be taken from the fire, its contents transferred to a canvass bag, and a vessel placed underneath. Oil and some water will run through. After twenty-four hours, separate the former by decantation, and filter it through paper.

This oil, thus prepared, is of a pale yellow colour; its smell is weak, and resembles that of a cod boiled for the table when in excellent condition. Its taste is bland, by no means disagreeable, and as might be expected, is totally free from rancidity. It is very liquid. Its specific gravity in my trials was 0.934, although in all the published tables of specific gravities it is stated to be 0.923. In cold weather it deposits much stearine, and this ought not to be separated.

The product of pure oil is very variable. He has obtained so much as a gallon (wine measure) from twenty-eight pounds of livers, the produce of fifty cods. Sometimes the livers will afford much less. The runnings of the first heat only should be used: a second heat will supply more oil, but it will be comparatively strong-smelling, ill-tasted, and deep-coloured. The above estimate is true only when the fish is in the best season, and fully grown. Towards the close of the season the produce will be less. The livers of some cods are flaccid and lie flat without plumpness on a plane surface. These afford a deficient quantity of oil, a brown, strong-smelling quality, and a large portion of brown water: they are totally unfit for use, and their oil is disgusting. The livers are often found diseased and dark-coloured; such afford a very bad oil, and are of course to be rejected.

On the west coast of Ireland, they consider the beginning of the year the best season, and on the east the month of November for the cod-livers. Thus, concludes Mr. Donovan, in preparing cod-oil fit for medical purposes, three chief things are to be attended to: the livers must be perfectly healthy; they must be as fresh as possible, the least putrescency being injurious; and the heat at which the extrusion of the oil is effected must not exceed 192° .

RIGIDITY OF THE LOWER JAW, CURED BY DIVISION OF THE ANTERIOR PORTION OF THE MASSETER MUSCLE.*

Dr. Mutter relates this case in our transatlantic contemporary. In January, 1839, he was requested to visit Harriett Wolcott, aged 16, for an affection of the mouth under which she had been labouring since her fourth year, and which followed inflammation of the cheek. Upon examination the left side of the jaw appeared much smaller than the right, and the integuments about the chin (on the same side) were much more closely connected with the bone, than is usual. The whole left half of the inferior maxillary bone, is in reality smaller than the right, and instead of presenting the natural angle at the junction of the ramus with the horizontal portion, is rounded off, so that it appears much straighter than it should be. There is no scar, nor any evidence of previous ulceration either within or without the cheek, neither does there exist any adhesion between the cheek and bone, but a strong fibrous band formed of the anterior portion of the masseter muscle was readily detected by introducing the finger between the teeth and cheek. This band is so short as effectually to prevent any thing like motion (except to a very limited extent) of the inferior maxillary bone, and the space between the upper and lower teeth is so small that an instrument

* American Journal of Medical Sciences, May 1840.

only three lines in thickness can freely be introduced between them. The patient is of course unable to chew, and has lived almost exclusively upon broths; nor can she protrude the tongue; and her teeth, in consequence of the impossibility of passing a brush between them, are in a very bad condition. Her articulation is also exceedingly defective.

Dr. Mutter thought it advisable to divide the masseter muscle, and afterwards, by a lever, gradually force the jaws apart.

"Having placed my patient in a good light, I passed the forefinger of my left hand along the space between the cheek and teeth until it was arrested by the band already alluded to. She was then requested to open her mouth as much as possible in order that the band might be put upon the stretch.—Using my finger as a director, I next passed along it, an instrument shaped like a common gum lancet, though larger, and having but one cutting edge, until its point rested behind the band. By pressing firmly upon the handle, the blade was made to penetrate the masseter muscle about its lower third, until the point could be felt between the muscle and integument. The band was then divided by drawing the knife forwards and at the same time directing it outwards and downwards. The section was indicated by a slight snap, and the propriety of the operation at once made manifest by the improvement in the case. For example the finger could now be passed between the teeth, which before the operation was impossible."

Dr. Mutter now introduced the lever that he had prepared with a screw, and afterwards gradually separated the jaws by means of it. At the end of six weeks, when the report closes, the space between the teeth was one inch and three lines, and the patient could *chew* as well as ever.

CASE OF IMPERFORATE VAGINA, AND MENSTRUATION (FROM THE BLADDER!)*

Ellen S——n, æt. 40, and married ten years, presented herself as an out-patient at St. Thomas's Hospital, under the care of Dr. Cape, on Friday, April 24, 1840. She complained of a hard and painful tumor, about the size of a melon, situated in the uterine region, which could be felt above the pubis. She had no discharge, and her general health was not impaired. On examination per vaginam being attempted, no vagina could be found. She was then requested to retire to one of the female wards, where she submitted to an ocular examination; the labia, nymphæ, clitoris, and all the external organs of generation, were quite normal, with the exception of the vagina, which was totally imperforate, not amputating even to a cul-de-sac; being perfectly flat and unyielding, with a granulated red surface. On examining per anum, the tumor could be very distinctly felt, painful on pressure, and apparently of a subcartilaginous character. She has menstruated regularly ever since she was thirteen, the period lasting four days, and of the usual quantity.

On the 15th of May, the catamenia being present, it was thought a good opportunity for ascertaining whence the discharge flowed, as, on the previous examination, the only aperture visible was the orifice of the urethra; when it was seen distinctly exuding guttatim from the meatus urinarius.

* Med. Gazette, June 26, 1840.

MALFORMATION OF THE ŒSOPHAGUS.*

This case is communicated to our contemporary by Mr. Mellor, of Charlton-upon-Medlock, near Manchester.

" In the month of August 1839, Mrs. P., the mother of four healthy children, was delivered of her fifth, a fine, well-formed infant, after a perfectly natural labour of a few hours' duration. When in due time the infant was put to the breast, it was observed that the nipple was scarcely retained in the mouth beyond a minute, when the little creature became apparently convulsive, and almost instantly rejected the nutriment which it had taken. On my subsequent visit I was made acquainted with the above particulars, when I felt disposed to assent to the opinion expressed by the mother, that flatulency might be the cause of the symptoms, and accordingly prescribed a simple carminative. This was almost immediately rejected, as the milk had been, the infant notwithstanding manifesting the greatest eagerness to supply its instinctive wants. Inferring the existence of some obstruction in, or malformation of the œsophagus, I attempted to pass a common bougie, which however proceeded only for a very short distance, and then became curved upon itself, apparently not having arrived further than the commencement of the œsophagus. Matters went on in this way for six days, no other evacuation having taken place from the bowels than the meconium, and the infant continuing to apply its mouth to the breast with no other result than that of a slight convulsive paroxysm so soon as the pharynx became filled, and the immediate repulsion of its contents. Early on the morning of the seventh day it died, when a post-mortem examination disclosed the existence of little more than the membranous pouch of the pharynx, which terminated in a cul-de-sac a little below the cricoid cartilage, no trace of the œsophagus being visible beyond this part. The stomach presented no deviation from its ordinary form and dimensions, with the exception of its cardiac orifice, where there existed a slight bulging at the part corresponding with the termination of the gullet, and which was firmly united to the diaphragm. Further, a probe, introduced at this aperture, could not be made to pass into the stomach. Between this point and the sternum not the slightest trace of œsophagus, or any bond of connexions whatever with the pharyngeal portion, existed. The stomach contained nothing but air and a little mucus; the other viscera appeared perfectly normal.

In juxtaposition with the foregoing case of defective conformation, I may mention an instance lately communicated to me by Mr. Heath, a highly respectable practitioner of this town. In this, the infant, which was of ordinary size, presented symptoms very analogous to those above described, and survived until the eighth day. On inspection after death, the duodenum was found obliterated to the extent of an inch or more, no further malformation having been observed."

ANALYSES OF THE MINERAL WATERS AT BRIGHTON.

We extract the following Table from a pamphlet recently published by Mr. Pickford, on the Artificial Mineral Waters prepared at Brighton. So many invalids are sent to that watering place, that it may be useful to many of our readers to see, at a glance, the composition of the waters prepared there.

* Med. Gazette, June 26, 1840.

TABLE OF ANALYSES OF SOME OF THE PRINCIPAL MINERAL WATERS PREPARED AT THE ROYAL GERMAN SPA, BRIGHTON.											
Grs. of Anhydrous Ingredients In one pound Troy.	Carlsbad.	Enns.	Martinsbad.	Kissingen.	Saratoga.	Schles- sicher.	Eger.	Pyrmont.	Spa.	Pullna.	Sedtschütz.
Carbonate of Soda.....	7.2712	8.0625	5.3499	..	0.8261	7.6211	0.8914	..	0.5531	..	..
Ditto of Lithia.....	0.0150	0.0405	0.0858	..	..	..	0.0282	..	..	..	..
Ditto of Baryta.....	..	0.0022	..	..	..	..	..	..	..	..	..
Ditto of Strontia.....	..	0.0055	0.0028	0.0592	0.0672	0.0170	0.0023	..	0.7387	0.5775	5.1045
Ditto of Lime.....	1.7775	0.8555	2.9509	4.8180	5.8531	1.5464	1.3501	4.7781	0.8421	4.8045	0.8935
Ditto of Magnesia.....	1.0275	0.5915	2.0390	1.3185	4.1155	1.5496	0.5040	..	0.0389	..	0.0032
Proto-Carb. of Manganese.	0.0048	0.0028	0.0288	0.0121	0.0202	0.0026	0.0322	0.0364	0.2813	..	0.0095
Proto-Carb. of Iron.....	0.0208	0.0120	0.1319	0.1397	0.0173	0.0356	0.1762	0.3213	0.0102	0.0026	0.0117
Sub-Phos. of Lime.....	0.0012	..	..	..	..	..	0.0172	..	0.0064	..	0.0088
Ditto of Alumina.....	0.0019	0.0014	..	..	..	..	0.0092	0.0110	0.0593	3.6000	3.6705
Sulphate of Potassa.....	..	0.4050	..	1.2540	0.1379	0.3160	..	0.0314	0.0281	92.8500	17.6920
Ditto of Soda.....	14.9019	..	28.5868	..	..	2.5106	18.3785	1.6092	..	..	..
Ditto of Lithia.....	..	..	..	..	..	..	..	0.0067	..	..	..
Ditto of Lime.....	..	..	..	5.5485	..	..	..	5.0265	..	1.9500	1.1287
Ditto of Strontia.....	..	..	..	..	..	..	..	0.0154	..	..	0.0347
Ditto of Magnesia.....	..	..	..	..	..	..	..	2.3684	..	69.8145	62.3535
Nitr. of Magnesia.....	..	..	..	..	..	..	..	..	..	..	5.9302
Chlor. of Ammonium.....	..	..	..	0.0364	0.1004	0.0164	..	..	..	..	..
Ditto of Potassium.....	..	0.0338	..	0.0326	0.0326	..	..	..	..	..	..
Ditto of Sodium.....	5.9820	5.7255	10.1727	39.3733	19.6653	0.8682	6.9229	..	0.3371	14.7495	1.2325
Ditto of Magnesium.....	..	..	..	3.6599	..	..	..	0.8450	..	..	..
Bromide of Sodium.....	..	..	..	0.8331	0.1513	0.0051	..	..	..	..	..
Iodide of Sodium.....	..	..	..	..	0.0046	..	..	..	..	..	..
Fluoride of Calcium.....	0.0184	0.0014	..	..	..	..	..	..	..	..	..
Alumina.....	..	0.0023	0.0023	..	0.0069	..	..	..	..	..	..
Silica.....	0.4329	0.3104	0.2908	0.1609	0.1112	0.2423	0.3548	0.3727	0.3739	0.1320	0.0900
Total.....	31.4606	16.0525	49.6417	56.7136	32.7452	14.7309	31.6670	15.4221	3.2691	188.4800	93.0133
Carbonic Acid Gas in 100 cubic inches.....	58	51	105	96	114	98	154	160	136	7	20
Temperature (Fahr.)	Sprud. 165° Neu. 188° Muhl. 198° Ther. 125°	Kessel. 117° Kranichen 84°	Kreutz. 83°	Ragodi. 85°	Congress. 89°	Obernale. 90°	Franzens. 84°	86°	Pouhon. 80°	5°	88°
Analysed by.....	Borzelius.	Truvé.	Borzelius.	Struve.	Schweitzer.	Struve.	Borzelius.	Struve.	Struve.	Struve.	Struve.

INFLUENCE OF THE LEFT BRONCHUS IN CLOSING THE DUCTUS ARTERIOSUS.*

Mr. T. W. King, Curator of the Museum of Guy's Hospital, advances the following hypothesis to account for the rapid closure of the ductus arteriosus after birth.

"In foetal life the air-tubes contain only a little fluid; they are probably but partially expanded, while the circulation is nearly single and equable, the auricles pretty equally full at all times, and the ventricles equally powerful. The chest continues of limited capacity; the diaphragm high, and the lungs confined about the heart. We may now reflect upon the principal effects of the first inspiration: a general expansion is made, which is never again to have its commensurate collapse; and, although that fulness of the lungs (as to air) which may be regarded as necessary and permanent, be not obtained till later, it seems pretty evident that the first inspirations must have a far larger share than any others in effecting this condition. Now the trunk becomes straighter; the neck is no longer bent forwards on the breast, and the trachea is elongated; the diaphragm, and with it the heart, is considerably drawn down, while the lungs are generally expanded, but most particularly outwards: and one particular result of all these changes, I imagine to be, that the left bronchus is rendered more full and tense, and also raised at the same time that the ductus arteriosus is drawn down with some force, and perhaps with some disposition to elongation. In fine, it is to the sudden and intimate cross contact of these two tubes that I would mainly attribute the closing of the blood-vessel, which is in a manner bent over the bronchus, and has also a more oblique direction given to its communication with the aorta."

We confess that we are inclined to attach more importance to the indraught of blood into the lungs, which inspiration must occasion, than to the mere stretching of the bronchus. Our readers, however, will judge for themselves. Mr. King's view is certainly ingenious.

RUPTURE OF THE HEART INTO THE PERICARDIAL SAC. LIFE FOR TEN HOURS.

Dr. Stroud relates the following case.

Case.—Frederick P., aged 29, after anxiety and vexation endured for a considerable time, and after having been liable to profuse bleeding of the nose, during the spring season, for many years, was, on the non-occurrence of this bleeding, subject for six weeks to a sense of fulness in the head, with lassitude and somnolency. On the morning of April 27, 1839, after having returned from Covent Garden Market, he was seized with faintness, giddiness and vomiting, and insensibility. The pulse became imperceptible, and he was apparently in a dying state. He was promptly bled by Mr. Symes, to three pints, recovered a little, continued complaining of great tightness of the chest, and weight at the heart, but died the same evening.

The pericardium contained a quart of blood which had escaped through an opening in the right auricle just below the insertion of the vena cava superior, the edges of which were not attenuated or apparently ulcerated. The author accordingly suggests the prudence of relieving plethoric oppression, even where signs of structural disease in the sanguiferous system are not evident. In this patient the heart was large, and loaded with fat.—*Med. Gaz.* June 19, 1840.

* *Med. Gaz.* July 10, 1840.

RESOLUTIONS OF THE MEDICAL ASSOCIATION OF IRELAND.

The following are the principal Resolutions of this young, but, perhaps, powerful body.

Dr. G. W. O'Brien, of Ennis, moved the fifth resolution, viz. :—Resolved—That the objects of the Association are—

1. To form a society for the protection of Medical Practitioners in all their just and legal rights :

2. To seek for a Legislative enactment, giving a permanent constitution to the Profession, and directing a competent and uniform standard of Education, and an equality of privileges for all persons who shall, in future, be permitted to practise medicine throughout the Empire, and—

3. To secure for the public, in future, the services of a scientific Apothecary, who shall be protected in the exercise of his Profession, and not engage in the practice of Medicine.

Dr. Purcell, of Carrick-on-Suir, moved the sixth resolution, viz. :—Resolved—That the Council be directed to prepare a Petition to Parliament, for the enactment of a measure which shall provide for the regulation and control of the Medical Charities ; also praying that adequate funds shall be provided for their support.

Dr. Jagoe, of Kinsale, moved the seventh resolution, viz. :—Resolved—That the Council be directed to prepare Petitions to Parliament for suitable remuneration to medical men, when called upon to perform public services in courts of justice.

Dr. Cranfield, of Enniscorthy, moved the eighth resolution, viz. :—Resolved—That the Council be instructed to prepare Petitions to Parliament, praying for attention to the neglected subject of Medical Police, and for encouragement to medical men disposed to engage in the investigation of all matters concerning the public health ; and that copies of these different petitions shall be forwarded to each Local Secretary, in order to procure signatures in all parts of Ireland.

Dr. Cane, of Kilkenny, moved the ninth resolution, viz. :—Resolved—That the following plan of General Medical Reform shall be supported by this association :—

The establishment, by law, of one Faculty, having three branches, one in each of the capitals of the Empire ; such Faculty to include all Practitioners in Medicine, both Physicians and Surgeons : each Branch to be governed by a Representative Council, elected periodically by and out of, the whole body of the Faculty in each Kingdom. The Councils to have the power of making regulations for the government of the Profession, and also of admitting Members : no person being permitted to practise without being examined and licensed as a Member of the Faculty. The regulations of the three Councils to be similar and uniform, general conferences being, from time to time, held in order to preserve uniformity. This 'One Faculty' plan contemplates the establishment of a class of scientific Apothecaries to be examined and licensed as such under the direction of the Councils ; also, that no Practitioner " shall be permitted to sell drugs, or to compound medicines, unless prescribed by himself, or by others in consultation with him, and for his own patients, except in rural districts, and by special license." Mr. Donovan's proposal for establishing a College of Pharmacy, might, with some modifications, be made to coincide with this portion of the 'One Faculty' plan. Institutions for teaching not to be connected with the licensing body of the faculty.*

REMOVAL OF PART OF THE SPHINCTER FOR PROLAPUS ANI.

M. Robert, reflecting on the inadequacy of excision of the prolapsed mucous membrane, as a curative measure, conceived the idea of removing some of the sphincter. A bad case presented itself in June, 1839. A washerwoman, aged 33, in St. John's ward, at La Pitié. The woman, when pregnant for the third time, had a prolapsus recti which was but temporary, and only occasioned a supportable degree of discomfort. Her fourth pregnancy brought on a prolapsus of the uterus, a permanent and very considerable prolapsus of the rectum, and a relaxation of the parietes of the abdomen. M. Roux now excised a prominent portion of the mucous membrane of the rectum. This somewhat relieved her; but the prolapsus soon increased; the fæces came away involuntarily, and she had pains in the loins, and the upper part of the thighs. This combination of symptoms confined the patient to her bed, and in June 1839 she was admitted into the Pitié. At that time the sphincter was so relaxed that four fingers could be easily introduced. The patient having been prepared by a progressive diminution of diet, and the use of opium, so as to produce as long a constipation as possible, M. Robert proceeded to operate in the following manner:—He made an incision on each side of the anus, beginning several millimètres from the middle of the aperture, and directed backwards to the point of the coccyx. The flap of skin between the two incisions was removed, together with the portion of the sphincter which it covered; and half the length of the muscle was thus removed. The two sides of the wound were united by three stitches of the twisted suture.

The case went on well. In the month of August the patient walked, and passed her stools voluntarily; but a small *bouvrelet* of the mucous membrane had already protruded, and though, twice touched with the actual cautery, was not destroyed. Yet the cure has been a lasting one.*

LEECH GATHERING IN RUSSIA.

One of the branches of industry prosecuted here is singular enough; it is the gathering of leeches for the Hamburg dealers. When talking with a person connected with this trade, we thought of Wordsworth's friend, of leech-gathering fame; but the collectors of the Ukraine do their work in such a wholesale, unpoetic way, that Wordsworth would not soil his verses with them. Having exhausted all the lakes of Silesia, Bohemia, and other more frequented parts of Europe, the buyers are now rolling gradually and implacably eastward, carrying death and desolation among the leeches in their course; sweeping all before them, till now they have got as far as Pultavia, the pools and swamps of which are yielding them great captures. Here a thousand leeches are sold for four roubles (3s. 4d.); at Hamburg, before reaching which one half die, the same number is sold for 120 roubles (near £5); and in England the country apothecary pays £9 and £12. 10s. for the quantity which originally cost only 3s. 4d. But of every thousand at least seven hundred die before reaching England.—*Bremner's Excursions in the Interior of Russia.*†

ADVANTAGES GRANTED TO NAVAL MEDICAL OFFICERS.

We are glad to perceive from Her Majesty's Order in Council, which has been

* Med. Gaz. Aug. 28, 1840.

† Ibid.

recently issued, that a meritorious class of public servants, the naval medical officers are to be henceforth placed, in respect to rank, designation, pay, and retirement, on a scale more nearly assimilated to that assigned to officers of the army medical department. The Lords of the Admiralty have accordingly been pleased to appoint Sir D. J. H. Dickson, M.D. Inspector of Hospitals; and Robert Armstrong, M.D. Deputy Inspector, to be attached to Her Majesty's Royal Naval Hospital at Plymouth; while Dr. Richardson with the former, and Drs. Mortimer and Liddell with the latter rank, are respectively appointed to Haslar Hospital. But the greatest boon granted by the change of regulations, is the privilege justly given to the Naval Assistant Surgeon to reckon the whole period of his full-pay service in support of his future claims for increased pay and retirement.

Notices of some New Works.

- I. TRAITÉ PHILOSOPHIQUE DE MÉDECINE PRATIQUE. Par *A. N. Gendrin*, D.M. 2 tomes. Paris, 1838-9. *Baillière*.
- II. TRAITÉ CLINIQUE DU RHEUMATISME ARTICULAIRE. Par *J. Bouillaud*. Paris, 1840. *Baillière*.
- III. DU TRAITEMENT MORAL DE LA FOLIE. Par *F. Leuret*. Paris, 1840. *Baillière*.

In the present Number we cannot do more than merely announce the titles and the general scope of the above works recently published in Paris: next quarter we shall submit them to a closer examination, and extract whatever we may find novel and valuable in their contents.

The first on the list is announced to be "*un ouvrage dogmatique*, which is to bring together and systematise all the departments of medicine which are specially applicable to the knowledge and treatment of diseases." Two volumes of the work have already appeared, and other two are promised. It would not be altogether fair to anticipate the result of our analytic review by giving an opinion at present on the merits of this "*Philosophical Treatise*," and we must therefore leave our readers in suspense as to the verdict that awaits the appellant.

Suffice it to say that *M. Gendrin* is one of the physicians of the *La Pitié* hospital in Paris, and is the author of several esteemed works. In 1823 he published *Researches on the Nature and Proximate Cause of Fevers* in two volumes; in 1827, an *Anatomical History of Inflammations*, (founded we believe, on a translation of the excellent and now rare work of *Dr. Thomson* of Edinburgh); in 1832, *An Account of the Epidemic Cholera of Paris*; and in 1835, a Translation with notes of *Dr. Abercrombie's* *Classical Treatise on the Diseases of the Brain and Spinal Cord*. We have reason therefore to expect that *M. Gendrin* may show himself better acquainted with the medical literature of this country than most of the French authors in the present day, who in this respect are most egregiously ignorant, and are in consequence often led to announce as discoveries what have been taught for the last quarter of a century in every respectable medical class-room in Britain.

With respect to *M. Bouillaud's* new work, or rather new edition of his former work "*Researches on Articular Rheumatism, &c.*" published in 1836, the readers of the *Medico-Chirurgical Review* need scarcely be told what is the character of its contents and reasoning. Who has not heard of the "*nouvelle formule*" of practising bleeding *coup sur coup*, by which *M. Bouillaud* utterly extinguishes (*jugule*,

to use his own word) all inflammatory diseases? He is certainly the most sanguinary doctor that we have ever encountered—sanguinary, be it remembered, towards his patients, and not to us gentle reviewers. Like *Murat*, he may be well called “le grand *sabreur* ;” we have only to substitute the doctor’s lancet for the swordsman’s scimitar, and the comparison is exact. There is something withal very amusing in our author’s writings; quick and fluent in thought and language, he is as bold, and confident in the closet as in the wards of La Charité Hospital.

Hear what he says of certain of his *confreres* who have presumed to disagree with him in his favourite dogmata:—

“In medicine there are men who pride themselves in never learning and never forgetting any thing; unfortunates who have not received from Heaven the noble spirit of advance. They may be compared to those in whom religion is utterly wanting; both are fatally condemned to final impenitence. They have eyes but they will not see, because they close them, ears but they will not hear because they shut them. Praying for better dispositions to them, we must leave to others the task of attempting their recovery, if this be possible, and if their malady be not such as divine grace alone can effectually relieve.”

Leuret’s work is an interesting one, and being founded on the author’s extensive experience at the Bicetre Hospital commands attention. “The object I have in view,” says he, “is to establish the truth of the following three propositions:—

1. If it be true that insanity depends on an alteration or morbid condition of the encephalon, we are completely ignorant in what this alteration consists.

2. The moral treatment of the insane, as usually practised, is considered only as an auxiliary of the physical treatment.

3. In the insane, the intellect and passions cannot be brought back to their healthy type or standard without the aid of moral treatment; and this mode of treatment is the only one which has a direct influence on the symptoms of insanity.

M. *Leuret* is of opinion that in the management of mental disorders, too much is attempted to be done by physical or medical remedies, and far too little by moral means, in the way of persuasion, remonstrance, and, if necessary, of compulsion, and even chastisement.

MANUEL PRATIQUE DE MAGNETISME ANIMAL. Exposition Méthodique des Procédés employés pour produire les Phénomènes Magnétiques et leur Application à l’Etude et au Traitement des Maladies. Par *Alph. Teste*, Docteur en Médecine de la Faculté de Paris, Membre de plusieurs Sociétés Savantes. Paris, 1840.

We had scarcely expected this. We really had thought that Animal Magnetism had got, for the present, a knock-down blow. Not at all. Dr. *Teste* has been applied to by three publishers for a Manual of the *Art*. He justly observes that nothing can be more conclusive on its popularity. Your booksellers are the real barometers of public opinion. They have in their ledgers the real statistics of what takes.

And so animal magnetism is at a premium, and a manual is in print. M. *Teste* asks himself what the faculty, the magnetisers, and the public will say of it? Now it may be laid down as an axiom, that a man never asks himself a question in print, that he does not know before-hand he can answer: accordingly Dr. *Teste* makes no bones of a reply to his interrogatory. The faculty will abuse it—the magnetisers will hold their tongues about it (the old story—“two of a trade,” &c. and the public will patronise it. Well done, Dr. *Teste*.

The Doctor asks himself another question, which, though certainly a poser, he disposes of rather cleverly. What is magnetism? says the Doctor to himself—buy my book, and you will know, says the Doctor to the reader.

The aim he proposes, and it is reasonable enough, is to teach magnetism, to disseminate its elements through all classes of society, and to make humanity understand the immense advantages that said humanity will draw from it. "God grant," quoth Dr. Teste, "I may succeed." Amen say we.

Dr. Teste is a magnetiser of no small calibre. He does all the orthodox miracles—transposes the senses—divines, &c. as well as even the Okeys.* He relates some capital cases, such as a perfectly authentic one of a lady who read through the lid of a box well locked—"the possible is immense," and, in the reading, proved it.

Dr. Teste concludes with a chapter on the necessity of magnetisers being *moral* men. We think that this is most laudably candid, and it is very true. Only conceive the power of a magnetiser, and it will be evident how virtuous he ought to be. A man who can see with his fingers, who can lay bare the very soul itself, and reveal the secret thoughts of men and women should be a very pattern of the moral excellencies. Shakspeare, with that knowledge of human nature for which he is always so conspicuous, and with that physiological acumen which he not unfrequently exhibits, has hit off this point exactly. For does not Hotspur say to Owen Glendower, that first and greatest of magnetisers, who could call spirits from the vasty deep—

"Tell truth and shame the devil."

It would have been well if this pithy advice had been taken by the philosophical sect that has sprung from Owen's loins. But even now it is not too late to repent. We admit that it is rather hard to ask the magnetisers to tell nothing but the truth, for it would leave them very bare in the world. Still the prejudice goes in favour of veracity.

We must not however enter on this fascinating subject. We conclude, then, by recommending this Manual to all who believe in transposition of the senses, who are of opinion that they can read through the lid of a box, who are conscious that they know the thoughts of others, who can predict the day of death of a magnetised *Jarvey*, provided he is not in the interim run over†—and, finally, to use the expressive and significant language of Mayo, just then in high *rappori*, who aspire to the awful power of "dislocating the soul from her usual tenement, and making her hold on to unaccustomed points and corners of the frame."

THE RETROSPECTIVE ADDRESS, DELIVERED AT THE SEVENTH ANNIVERSARY MEETING OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION, HELD AT LIVERPOOL, July 24th and 25th, 1839. By *John Addington Symonds*, M.D., Senior Physician to the Bristol Hospital, Lecturer on the Practice of Medicine, &c. &c. Worcester, 1840.

Of Dr. Symonds we have so frequently had occasion to speak highly that, we believe, we need not introduce him formally to our readers. The present Address does not derogate from his reputation—it breathes the same spirit of cautious generalization and correct judgment, and evinces the same liberal acquaintance with the literature of his profession as ever.

* By the way, where are these marvellous maids? "The oracles are dumb."

† A magnetic fact.

We quote a succinct, yet sufficient summary of the latest experiments on the glosso-pharyngeal and the lingual nerves. They leave our information very near what we conceive to be the truth.

The part, says Dr. Symonds, which the glosso-pharyngeal takes in deglutition, is to convey impressions to the medulla oblongata, together with the branches of the fifth pair distributed on the fauces, and also with the superior laryngeals: it is not a motor nerve. The motive influence in this function is transmitted along the pharyngeal branches of the vagus, along the hypoglossal, the fifth pair, the portio dura, and the descendens noni. The superior laryngeals are mainly nerves of sensation, having a very few motor nerves distributed to the cricothyroid muscles. The inferior laryngeals are principally motor; they supply all the muscles attached to the arytenoid cartilages, and perhaps to the muscular fibres of the trachea: they contain a few sensitive filaments distributed over the trachea and pharynx, and a very few over the larynx. Contraction of the glottis is evidently a reflex action; the superior laryngeals being the afferent nerves, and the inferior laryngeals the efferent. In the account of the effects of division of the vagi in the middle of the neck, i. e., above the origin of the recurrensts, there is a curious observation bearing upon Dr. Ley's well-known theory of laryngismus stridulus. It was noticed that animals after this injury would appear to be breathing with ease, till any struggle or other muscular exertion took place, when symptoms of suffocation immediately supervened, as if the stronger inspiratory action brought on the paroxysm, by producing so powerful a current of air as to close the passive lips of the glottis. From the experiments on the *cardiac branches* of the vagus, it may be inferred that although they convey mental and other impressions from the nervous centre to the heart, yet the movement of the latter organ may be affected by such causes after the division of the vagi, and recurrensts in the neck. The observations upon the degree to which the action of the respiratory muscles was influenced by *division of the vagi* are very important: the movements uniformly became slower, though at first they were performed with ease; after a time they became more laborious; but some of the animals quite recovered the effects of the operation. The changes in the lungs were carefully noted in the animals which died asphyxiated, and Dr. Reid convinced himself that they could be sufficiently accounted for by the diminished frequency of the respirations, and the consequent congestion of the pulmonary vessels. Though there is good reason for believing that the impressions which excite the reflex respiratory action are chiefly conveyed to the medulla by the vagi, yet they appear to be also conveyed by the branches of the fifth pair distributed on the face. Dr. Reid wishing to observe whether the want of the *vagi* is compensated by volition, removed the cerebrum and cerebellum; but he found that the respiratory movements still continued, though greatly diminished in frequency. The observations on the *gastric branches* of the vagi were not less interesting. In several animals the muscular movements of the stomach continued, the gastric secretion returned, the appetite was restored, chyle was found in abundance in the thoracic duct, and, in fact, the whole digestive process was re-established, notwithstanding dissection proved that the operation had been performed most completely: at the same time it was proved that section of the nerves very materially deranges the digestion for a time, though if the animal live long enough, the effect will subside. It should be remarked, that in all the experiments on the vagi, Dr. Reid took care to maintain the entrance of air into the trachea. If the animal was not full-grown, the larynx being therefore less developed, a tube was introduced into the windpipe.

At the sitting of the Académie de Médecine, January 21, 1839, MM. Jules Guyot and Casalis presented an account of their experiments on the nerves of the tongue. The glosso-pharyngeal betrayed great sensibility when pricked, pulled, or cut: the division of it impeded deglutition, and appeared to destroy the perception of certain flavours, but not of all; probably those which are felt

at the base of the tongue. Division of the lingual branch of the fifth pair destroyed the tactile sensibility and the sense of taste in the three anterior fourths of the tongue. Division of the hypoglossal paralysed the same portion of the tongue, but left the taste and tactile sensibility unimpaired.

One result of these experiments is opposed to the conclusion from those of Panizza as to the function of the lingual branch of the fifth pair. The latter observer considered that it imparts nothing more than tactile sensibility. The true opinion seems to be, that this nerve comprises some fibrils subservient to taste, and others to common sensation. This two-fold function is presumable from a striking case related by Dr. Romberg, in *Müller's Archives*, of paralysis of the third branch of the fifth pair on the left side, which was caused by pressure upon this nerve just after its issue from the cranium. In this case there was loss of taste as well as of tactile sensibility on the left half of the tongue. As for the glosso-pharyngeal, Dr. Romberg throws out the very probable idea that the signs of nausea and retching, caused by irritation of this nerve, have been mistaken for indications of taste.

AN ADDRESS UPON LAYING THE FOUNDATION-STONE OF THE QUEEN'S HOSPITAL, BIRMINGHAM, JUNE 18, 1840. WITH NOTES AND AN APPENDIX. By *Vaughan Thomas*, B.D. Vicar of Stoneleigh, Warwickshire, and formerly Fellow and Tutor of Corpus Christi College, Oxford. To which is prefixed, an Account of the Ceremony, and the List of Subscriptions to June 20. Printed at the Request of the Council of the Royal School of Medicine and Surgery. Oxford, 1840.

We are right glad to see two things of which this pamphlet offers us ample evidence—first, the powerful interest taken by the public in the erection of provincial hospitals and prosperity of provincial schools—and secondly, the zealous manner in which our able and excellent clergy are aiding the sacred cause of medical education. All this is very evident from the history of the Birmingham School of Medicine.

We are tempted to extract one passage from the pamphlet now before us. The eloquent and reverend Orator deploras the silence of the clergy in their addresses to the public sympathy and charity on the educational objects and value of hospitals. The benefit to the sick patient has been descanted on, but the wider benefit to the whole human race from the knowledge conferred on the student of medicine has been passed in utter silence. Let us hope for better things.

“ I impute not,” says Dr. Thomas, “ these omissions to the worthy, the charitable, the munificent of those early days as personal faults ; they are stated simply as facts ; if they are to bear a harsher name, I would call them, not the faults of individuals, but of the age in which they lived ; for some of them lived in days of darkness, and some of twilight, as to the great truths, that pathology must be studied like other natural sciences, under the guidance of facts and phenomena ; that inductive philosophy, in this as in other applications of its power, demands instances and examples ; that no safe or sure progress can be made in conducting the studies of the novice, or in completing those of the proficient, without the inspection and explanation of cases, without the power of referring to the different sorts of accidental or constitutional, of structural or functional mischief, as instanced in the sufferings of individuals ; and where are these to be found in such contiguity to each other, in such variety and abundance, and under such diversities of internal or external character, as on the beds of an hospital ? But to these incontestable truths, and to these wants of professional life ; to the obvious interests of the public, and to the duties of

charity in the dispensation of this necessary knowledge, founders, trustees, governors of hospitals, do not in early times appear to have paid any attention."

After pointing out what might have been urged, he goes on to say :—

"Such are some of the topics which a knowledge of the educational use and application of an Hospital would have administered to those, who, during more than two centuries and a half, have been successively called upon to plead the cause of St. Bartholomew's and St. Thomas's. With great power of language, and piety of purpose, and compass of scriptural warranties, have they urged the cause of poverty and sickness. But preparing the young for the care and cure of sickness, by teaching them what they ought to do in cases of accident or disease, and by giving them the manual, the moral, the intellectual ability to do it, were departments of charitable exertion, which in those days were neither understood by the advocates nor the administrators of hospitals. The merciful ends of such courses of medical and surgical education never entered into the calculations of the wise and good; it ought however to be added, in justice to those able and pious orators, that such topics, as the charitable offices of medicine and surgery, and the Christian duty of training up pupils and apprentices to be good practitioners by attending hospital practice, would scarcely have been understood in the general ignorance or indifference that prevailed, much less would they have been felt, as grounds and reasons for a more liberal contribution in those days of insensibility to the educational wants of the profession."

We are sure that the diffusion of such sentiments as these in the wide and influential ranks of the Church, would be productive of the utmost benefit.

THE MATERNAL MANAGEMENT OF CHILDREN, IN HEALTH AND DISEASE.

By *Thomas Bull*, M.D. Physician Accoucheur to the Finsbury Midwifery Institution, and Lecturer on Midwifery, and on the Diseases of Women and Children, &c. &c. London, 1840.

Dr. Bull informs us in his Preface that his book is written for the young mother. He tells us, too, that in the first chapters, devoted to the general management of the child in health, the author has endeavoured to teach the young mother, that *the prevention of disease is her province, not its cure*; that to this object all her best efforts must be directed; and, moreover, that to tamper with medicine, when disease has actually commenced, is to hazard the life of her offspring.

In the fourth chapter it has been attempted to point out, how the first symptoms of disease may be early detected by the parent. The subject has been felt to be a difficult one, and to give particular directions quite out of the question; but it is hoped that the suggestions thrown out will, in some measure, answer the purpose intended. On the advantage of an early and prompt application of remedies in the diseases of childhood, generally so active in their progress and severe in their character, it is unnecessary to offer any observation.

The latter part of the work, consisting of the maternal management of disease, the author regards as a subject of high and serious moment. Small as is the attention which has been hitherto paid to it, yet, in the diseases of infancy and childhood, how invaluable is a careful and judicious maternal superintendence to give effect to the measures prescribed by the physician.

We have looked over this little book, and we think it likely to be useful to the parties to whom it is avowedly addressed. The directions, though concise, are for the most part sufficiently full, and, are characterised by discretion and good sense.

PHARMACOPÉE UNIVERSELLE, OU CONSPECTUS DES PHARMACOPÉES D'Amsterdam, Anvers, Dublin, Edimbourg, Ferrare, Genève, Grèce, Hambourg, Londres, Oldenbourg, Parme, Sleswig, Strasbourg, Turin, Wurzburg; Americane, Autrichienne, Batave, Belge, Danoise, Espagnole, Finlandaise, Française, Hanovrienne, Hessoise, Polonaise, Portugaise, Prussienne, Russe, Sarde, Saxonne, Suedoise et Wurtembergeoise, &c. &c. By *A. J. L. Jourdan*, Membre de l'Académie Royale de Médecine. Second Edition. Paris, 1840.

M. Jourdan, in a sensibly written Preface, points out the necessity for an acquaintance with the various Pharmacopœiæ, and concludes, from the sale of his first edition, and the various translations of his works, that it has proved both acceptable and useful—and so, no doubt, it has done.

This new edition is, in fact, a new work. Whilst the old one presented the contents of 35 legal Pharmacopœiæ and 18 Formularies, this contains 42 Pharmacopœiæ and 31 Formularies. There is an account of the various weights and measures used in the different countries of Europe, and their relation to each other, borrowed from the admirable tables of Lehmann.

Of the execution of this edition we may speak from a cursory glance, in very high terms indeed. The work is one of very great value to every practical physician and surgeon, and no collection, even a moderate one, of useful works on medicine is complete without it. We recommend it, then, strongly to our readers, and still more strongly, if possible, to all book societies.

RECENT WORKS ON ANATOMY AND PHYSIOLOGY.

I. QUAIN'S PLATES—Fasciculi 50 to 70.

Let us not forget to chronicle these. They maintain (we think they do more) the character with which they started, and having now nearly reached completeness, they justify our reiterated recommendations as well as the purchaser's outlay. The nerves and viscera have been the subjects of the late Fasciculi. They are very well executed. We would, however, repeat the advice we have already given to Mr. Quain and his publisher, to add some supplementary Fasciculi, in order that the work may contain everything needful. No one will grumble at eight or ten extra numbers, if they lead to that. The only fault we find is one of this description.

II. THE ANATOMIST'S VADE MECUM: A SYSTEM OF HUMAN ANATOMY.

By *W. J. Erasmus Wilson*. With upwards of 150 Illustrations by Bagg. London, 1840.

This is a very good little book. Mr. Wilson observes:—"The student of medicine, from the first moment of commencing his labours in the study of anatomy, must be made aware of the absolute necessity that exists for clearness of thought, exactness of language, and a rigorous arrangement of ideas. He must feel confidence in the knowledge which he possesses, and he will then exhibit that confidence in the decision by which all his actions will be characterised. As a text-book for illustrating in a precise method the materials of instruction, this work is especially designed; and the severity and inflexibility of order have not been departed from in treating of a single branch of the subject."

"I hope I may be permitted to say that the engravings are beautiful examples of a most instructive and valuable art. The advantages of such illustrations in a demonstrative science cannot be too highly appreciated. The mode in which the engravings have been printed—a distinct branch of art in itself,—will not pass unnoticed by those who are acquainted with the complicated process and

extreme care which are necessary to the production of the delicacy and force of effect of such graphic illustrations."

These illustrations are more than 150 in number. The wood-cuts are really exceedingly well executed, and singularly clear for their size. And they will afford much assistance to the student. We cordially recommend the *Vade Mecum*.

III. *ELEMENTS OF PHYSIOLOGY.* Parts I. II. and III. Second Edition; Parts IV. and V. First Edition. By *J. Müller*, M.D. Translated by *William Baly*, M.D.

It is impossible to speak in too high terms of this admirable work. We rejoice to find that the sale is commensurate with the merits of it, and that the sound views, eminent sagacity, and excellent judgment of M. Müller are appreciated by the English Profession. It must form, as, indeed, it does, the text book of the Lecturer on Physiology, and to young and old, the student in the class room, or the practitioner in his library after the toils of the day, it will convey both useful and delightful knowledge. We commend it to all, and trust that by all it will be patronised.

We should state that the Parts already out contain:—

I. General Physiology—the Blood and Circulating System—the Lymph and Lymphatic System—Respiration—Nutrition, Growth, and Reproduction.

II. and III. Secretion, Digestion, Functions of the Glands without Efferent Ducts, Excretion, and the Nervous System.

IV. Ciliary Motion, Muscular and Allied Motion, Voice and Speech.

V. The Senses.

AN *ESSAY ON THE TREATMENT AND CURE OF PULMONARY CONSUMPTION, ON PRINCIPLES NATURAL, RATIONAL, AND SUCCESSFUL.* With Suggestions for an Improved Plan of Treatment of the Disease amongst the Lower Classes of Society; and a Relation of several successive Cases restored from the last Stage of Consumption to a good State of Health. By *GEORGE BODINGTON*, Surgeon. London, 1840.

It will soon appear that Mr. Bodington proposes a great alteration in our treatment of consumptive patients. He thinks, and perhaps he is not very wrong, that at present the complaint does us no great credit. That, we fear, will be generally admitted, whatever may be thought of his method.

The theory he entertains is easily set forth:—

"It will be observed, that the main ground of the treatment has been to preserve or restore to a normal condition, the functions of the nervous filaments, interwoven with the substance of the lungs, and exercising influence over the capillary system and other parts of the organization: it has been assumed that the first link in the chain of morbid actions arises there, as they first feel the irritation from the presence of the morbid matter deposited as a foreign body, and that all the other changes are consecutive to this wasting or destruction of the nervous energy of the filaments with which the tuberculous matter comes in contact. Upon this view the treatment of pulmonary consumption, in the way herein recommended, has been founded."

It seems to us that the presence of tubercles being granted, there is no need of the "wasting of the nervous energy" to explain the rest. Nor is there any proof of any such wasting at all. Disease has already advanced, the constitution is already contaminated, the first change of a series of changes has occurred when the tuberculous matter is laid down.

Whatever we may think of the theory, the practice founded on it is not bad, if the following statement is borne out by the result.

"An uniform and complete success having resulted in the treatment of several cases of tuberculous consumption, upon the principles and plan explained in the following pages, the author deems it his duty to publish them, with his opinions and principles of treatment."

Mr. Bodington is an enemy to confinement to the chamber—to tartarized antimony—to digitalis—to "demulcents, blisters, leeches, plaisters," &c.—to the sea-coast—to the inhalation of gases. The gas he likes is the fresh air, and it must be owned that it is after all a very good gas.

"The only gas fit for the lungs is the pure atmosphere freely administered, without fear; its privation is the most constant and frequent cause of the progress of the disease. To live in and breathe freely the open air, without being deterred by the wind or weather, is one important and essential remedy in arresting its progress;—one about which there appears to have generally prevailed, a groundless alarm lest the consumptive patient should take cold."

Now, then, for the plan.

"In order then to restore a consumptive patient, it will be necessary especially to attend to the following matters. We shall find first of all a rapid and weak pulse, ranging from 120 to 140 beats in a minute, clearly indicating a deficient supply of blood, and the heart and arteries irritable in proportion to this deficiency. This condition must be met at once, not by the means termed 'antiphlogistic,' but with frequent supplies, in moderate quantities, of nourishing diet and wine; a glass of good sherry or Madeira in the forenoon, with an egg, another glass of wine after dinner, fresh meat for dinner, some nourishing food for supper, such as sago, or boiled milk, according to the taste and digestive powers of the patient. This will be supplying means to rectify the morbid condition of the nutritive functions, and to allay the irritability of the heart and arteries. I have generally succeeded in the course of a few days, or perhaps a week, in reducing the pulse from 130 or 140 down to 90, by means of this diet, and by a systematic use of sedative medicines, and other means. The whole nervous system is unduly excited, or affected in some way we know not how to express or understand, from our limited knowledge of it, when under the influence of this disease, and neither can nutrition be affected, or the muscular system recover strength, or the vessels be filled with a due supply of the vital fluid, unless that nervous disorder be allayed and soothed, or rendered more in accordance with a healthy condition. The plan to obtain this object is, to give alterative doses of sedatives, and also direct or full ones. The former consist of moderate doses given at intervals throughout the day, with the view of allaying the general nervous excitement. The direct or full dose is given at bed-time, to allay coughing and procure sleep. Aconite, henbane, or the salts of morphia may be used. I have preferred generally the hydrochlorate of morphia: A sufficient dose to procure a whole night's repose should be given every night, in addition to the alterative doses above-mentioned; the latter may be administered, in an almond emulsion, in doses repeated three or four times a day. Should the medicine produce constitutional effects, paleness, faintness, sickness, giddiness, it must be laid aside for a period, and an antidote will be found in small quantities of weak brandy and water, or wine and water. The sedative medicines should be resumed so soon as these effects are removed.

I come now to the most important remedial agent in the cure of consumption, that of the free use of a pure atmosphere; not the impure air of a close room, or even that of the house generally, but the air out of doors, early in the morning, either by riding or walking; the latter when the patients are able, but generally they are unable to continue sufficiently long in the open air on foot, therefore riding or carriage exercise should be employed for several hours daily, with intervals of walking as much as the strength will allow of, gradually increasing the length of the walk until it can be maintained easily several hours every day. The abode of the patient should be in an airy house in the country;

if on an eminence the better: The neighbourhood chosen should be dry and high; the soil, generally of a light loam, a sandy or gravelly bottom; the atmosphere is in such situations comparatively free from fogs and dampness. The patient ought never to be deterred by the state of the weather from exercise in the open air; if wet and rainy, a covered vehicle should be employed, with open windows. The cold is never too severe for the consumptive patient in this climate; the cooler the air which passes into the lungs, the greater will be the benefit the patient will derive. Sharp frosty days in the winter season are most favourable."

We dare say Mr. Bodington will not admire our opinion, or deem it the most enlightened in the world. Yet, such as it is, we give it. We are really disposed to go some way with him, though we cannot go the whole. We quite agree with him that to treat consumption by good doses of antimony, digitalis, and drugs of that sort, is neither consistent with sound pathology, nor attended with anything like success. We agree with him too, that there are many cases, incipient ones more particularly, where the open air, judiciously indulged in, is highly valuable, and infinitely preferable to confinement. But we cannot subscribe to the general use of wine, and to the selection of elevated situations for residence, and to the exposure to weather, and to the proscription of regulated confinement and of counter-irritation, in all cases of phthisis. In this, as in other things, there is a mean which a sound judgment will seek after and maintain. And, so far as our experience has gone, great benefit has accrued from the careful employment of measures of this very sort. Yet we do think they have been abused, and, although there is something bizarre in Mr. Bodington's hypothesis, and extreme in the treatment he has founded on it, this very extravagance (if such there be) may awaken useful reflections in the minds of such as commit extravagances on the other side.

CUTANEOUS DISEASES.

I. COMMENTARIES ON DISEASES OF THE SKIN. By *Anthony Todd Thomson*, M.D. &c. &c. &c. Illustrated by Coloured Plates, representing the Commencement, Progress, and Termination of the Eruptions,—Drawn, Lithographed, and Coloured by Joseph Perry. Taylor and Walton, London, 1840. Three Fasciculi, with the Atlas of each, lie before us. The two first are devoted to the Scaly Eruptions, the third to Herpes and Rupia. We shall notice the letter-press more fully next quarter. It only remains for us to speak in very favourable terms of it now, and to refer to the plates. To say that they are executed by Mr. Perry is to say almost enough. They exhibit all his fidelity of drawing, his finish of execution, his brilliancy (shall we say too great) of colouring. But we shall revert to the work next quarter, and examine it more in detail.

II. ILLUSTRATIONS OF CUTANEOUS DISEASE, &c. By *Robert Willis*, M.D. Parts XVII. XVIII. and XIX. for July, August, and September.

Fresh faces must not drive away our recollection of an old friend. Dr. Willis's excellent work continues, and it fully maintains its reputation. We have vividly depicted Herpes Circinnatus—Hypertrophia Folliculorum—Rupia Prominens—Lichen Acutus and Lichen Chronicus—Prurigo—Acné—Acné Rosacea (to the life)—Chloasma—Trichosis Menti—Eczema Chronicum Pudendorum—Anthrax—Elephantiasis Arabica.

Of all we can speak in high terms, and of each we shall speak more at large next quarter, when we shall bring together the works of Dr. Willis and of Dr. AT. Thomson.

ZOOLOGY AND NATURAL HISTORY.

- I. A GENERAL OUTLINE OF THE ANIMAL KINGDOM AND MANUAL OF COMPARATIVE ANATOMY. By *Thomas Rymer Jones*, F.Z.S. Professor of Comparative Anatomy in King's College, London. Illustrated by numerous Engravings on Wood. Parts X. and XI. Price 2s. 6d. each Part. Van Voorst, London, 1840.

Mr. Jones has arrived at the Vertebrata, and Fishes are served up in the eleventh Part before us. The execution of the work does not flag, no trifling encomium, and the mechanical execution of both letter-press and wood-cuts is admirable. We would reiterate our recommendations to our readers to possess this work.

- II. A HISTORY OF BRITISH BIRDS. By *William Yarrell*, V.P.Z.S. Illustrated by a Woodcut of each Species and numerous Vignettes. Parts XVIII. and XIX. Van Voorst, London, 1840.

Mr. Yarrell is again here with his delightful sketches of our Native Birds. And a pretty looking volume they will make. The work, we see, verges towards its completion. Had we any *fair* readers we would press it on them; the doctor's drawing-room table should be furnished with it, even though the shades of Hippocrates should frown it from the sacred shelf devoted to the sad and learned writers on our science.

- THE NATURALIST'S LIBRARY. Conducted by Sir *Wm. Jardine*, Bart. Ichthyology; treating of the Nature, Structure, and Economical Uses of Fishes. By *J. S. Bushnan*, M.D. pp. 219, with numerous plates. Lizars, Edinburgh. Highley, London, 1840.

In this most interesting volume, Dr. Bushnan has presented us with a highly characteristic portrait of the habitats, anatomy, physiology, and economy of that great class of animated beings which inhabit the "waters under the earth"—which existed perhaps millions of years before MAN was created—and which forms a connecting link between the beasts of the field and the birds of the air. The work is executed with singular care and ability, and does Dr. Bushnan infinite credit. It is preceded by a memoir of Hippolito Salviani, an author probably unknown, even by name, to the majority of our readers, but who cultivated natural history in general, and ichthyology in particular, in a distant age, in troublesome times, and with praiseworthy assiduity. Baron Cuvier and our present author have rescued the venerable name of Salviani from comparative, but unmerited obscurity, and deserve the thanks of all the lovers of God's wonders on this globe. The plates of this volume are admirably executed and beautifully coloured. One other volume on the same subject is promised from the pen of that able and enterprising traveller, M. Schomburgh, "*On the Fishes of the Essequibo, and the Rivers of British Guiana.*" We shall hail it with great pleasure; in the mean time we return our best thanks to the talented author of the present volume, and wish him long life and that greatest of blessings—GOOD HEALTH.

EXTRA-LIMITES.



CASE OF DRACUNCULUS OR GUINEA-WORM.

(To the Editors of the *Medico-Chirurgical Review*.)

Kissy Hospital, Sierra Leone, 28th Nov. 1839.

GENTLEMEN,—I have the honour to forward you the particulars of a case of Dracunculus or Guinea-worm which came under my care as surgeon to the Liberated African Hospital, at Kissy. Should you deem the same to possess sufficient interest to occupy a place in the columns of your valuable journal, I will feel much indebted by its insertion. I have taken the liberty at the same time of requesting your acceptance of the accompanying morbid preparation, taken from the subject of the case above alluded to.

I have the honor to be,

Your most obedient humble servant,

ROBERT CLARK,

Assistant Surgeon to the Colony of Sierra Leone.

Ogoumini, a liberated African boy, æt. 11, a native of Housu, was admitted to hospital on the 30th of January, 1839, with a worm protruding from inner and inferior third of right thigh; his general health is good. Three inches of the worm was gently drawn out, when two inches was removed with scissors and a thread attached to remainder to prevent its retreating; during its extraction he complained a good deal of pain.

Apply a soft cassada poultice so as to cover the worm.

February 4th.—Up to this date no change has taken place, but this morning the worm was found lying on poultice; it measured three feet; complains of pain in sole of left foot. On examination, I found a small vesicle, on opening which a small quantity of a milky-like fluid escaped, but no worm could be detected, the little sufferer maintains however, that there is a worm present there.

Immediately apply a large soft cassada poultice.

8th.—The poultice has been regularly applied twice a day up to this date, when a worm was observed to present where the vesicle had been opened; four inches of the animal were drawn out, when three inches were removed, the remaining portion being treated as above described, the remainder came away on 11th inst. when it was found to measure one foot and a half.

13th.—Two worms have appeared, one situated on the outer portion of left foot, the other on anterior edge of right ankle; several inches of the former were extracted and about one inch of the latter was drawn out—

R. Liniment. Sapon. C. ʒij.

Let the ankle be embrocated with liniment, which is also to be applied over the foot.

14th.—To day I gently drew out one and a half inch of worm situated on right ankle—that on left foot I entirely removed—says that he has a tingling sensation over the whole body, accompanied with horripulation.

20th.—The sore on left foot from which the worm was extracted has put on an unhealthy appearance, its centre being bloody.

R. Acet. plumb. gr. vi.

Ps. opii. gr. iss.

Aquæ font. ʒj. M.

Ft. Solutio.

The lotion to be applied to sore, after which let it be covered with a poultice.
23rd.—The centre of ulcer is nearly filled up with healthy granulations.
During the night he was attacked with bilious diarrhœa.

R. Ol. ricini. ℥ss.

Sub-mur. hyd. gr. ij.

Aquæ font. ℥i. M.

Ft. haustus, stat. sumend.

Continue lotion and dress the sore with simple cerate.

26th.—Diarrhœa has continued in spite of the administration, every three hours, of the Mist. creta. c. opio. combined with catchu, which he has taken since the 24th inst. Skin clammy—tongue red at tip—eyes are sunk in and glossy—great prostration of strength with sinking of abdominal parietes towards vertebral column, evacuations are now mixed with frothy mucus and undigested aliment—he is much emaciated. To-day a worm has appeared on the right foot, close to tarsal metatarsal articulation—it has resisted every effort made for its removal.

Continue poultices and dressing to sore on left foot, which is almost healed up. Discontinue chalk mixture.

R. Sub-mur. hyd. ℥ij.

Ps. opii, gr. iij. M.

Ft. mass. et divide in pil. No. xij.

One of the pills to be taken every three or four hours.

His common drink to consist solely of rice water. Let the abdomen be circled with a flannel bandage, which is to be moderately tightened. To be allowed a small quantity of wine with well-boiled arrow-root.

28th.—The treatment last mentioned was regularly continued, but proved ineffectual in suppressing the evacuations, for he rapidly sunk and died on the morning of the 29th inst.

Post-mortem Examination.—Head—Brain healthy.

Thorax—Lung of left side adherent to the walls of chest. Pericardium contained about a drachm of serous fluid; on removing the heart and making a section through right auricle and ventricle, an organized substance of a dirty-white colour and nearly globular in form was found to fill up the auricular cavity; a band of similar colour proceeded from the tumor into the right ventricle, where it became attached to the walls of heart; the upper surface of tumor was connected to the fleshy columns of auricular portion: proceeding from inferior portion of band there was a loose process, descending into the ventricle.

Abdomen—Peritoneum contracted; stomach and intestinal canal filled with fluids of a dark green colour; the other organs were normal,

AN ACCOUNT OF A REMARKABLE INSTANCE OF RUPTURE OF THE DUODENUM; AND OF SOME OTHER RARE OR INTERESTING CASES, (read at the last meeting of the British Association.) By Sir David J. H. Dickson, F.R.S.E. F.L.S. Physician of Plymouth Hospital.

RICHARD HAWKINS, marine, æt. 40, who had been complaining for some days, but was not considered seriously ill, at 4 a.m. on Sunday the 4th of March, whilst straining at stool, was seized with excruciating pain in the right hypochondrium. He was admitted into this hospital from H. M. S. Royal Adelaide at 3 p.m. and died before midnight. The symptoms were, severe pain in the region of the cæcum and ascending colon, which he attributed to flatulence; a hurried, restless, and impatient manner; pale, haggard, and anxious countenance, expressive

of great distress; short, hurried respiration; and a very weak, quick, and irregular pulse. General depletion had been freely resorted to previously to his admission, followed by aperients, without relief; and as he attributed all his suffering to flatus, warm purgatives, assisted by turpentine enemata, carminatives, &c. were administered; followed, as the pain continued unabated, by leeching, and assiduous fomentations, but without any relief, and he sank at half-past 11 P.M. I afterwards ascertained that he had been reduced to the ranks for fighting and drinking three days previously; and while wrestling was thrown with violence backwards, on the breech of a gun.

Section cadaveris, 40 hours P.M.—The stomach and bowels were distended with flatus, and there was also some gas in the abdominal cavity. The vessels of portions of the intestines were congested; the cæcum and ascending colon were normal, but the transverse and descending portions of the gut were signally contracted. On cautiously raising the bowels, a quantity of ingesta was found to have escaped from the duodenum, which was ruptured or perforated in four different places, within an inch and a half of the jejunum. Its attenuated and pellucid appearance, especially near to its termination, rendered it probable that the mucous and muscular coats had previously undergone *ramollissement* and absorption, and that the peritoneal coat had afterwards given way from mechanical violence or distention. There was no redness nor congestion in the neighbourhood of the apertures; three of which were large enough to admit the end of the finger; and from one to two inches apart: nor did the intestines appear to have been otherwise diseased; but the internal surface of the stomach exhibited some dark red patches, from venous congestion, so well described by Dr. Yelloly in the *Medical and Chirurgical Transactions*. I have already alluded to the soft attenuated state of the ruptured coats of the duodenum, which was the more marked from the thick appearance of the jejunum caused by the rugæ of the valvulæ conniventes,—but there are not sufficient data from which we can fairly infer how long these lesions had preceded death; although the probability is, that they happened when the patient felt the excruciating pain while straining at stool; or whether they occurred simultaneously, or consecutively—but the situation of the openings, and the manner in which the gut is enveloped by the peritoneal reflexions, may explain why not more of its contents had escaped, in this instance; and hence persons may survive such accidents for several days, or only a few hours, according to circumstances. Looking to its very peculiar course, and the manner in which the duodenum is bound down, it does not appear to me improbable, that it should be more liable to injury from particular causes than the more free and floating intestines. I allude to violent muscular exertions, and contortions,—especially such as are accomplished by retroversion, or bending the body backwards, as in wrestling, tumbling, certain feats of horsemanship, &c. Such persons often die suddenly and without cadaveric inspection—or, should there be any examination p. m., if superficially conducted, the cause of death (as might have happened in the present case) would probably escape detection. Hence the same remark is applicable here which I made in my paper on Rupture of the Recti Abdominis and other Muscles,—read at a former meeting of the British Association,—viz. that, in all probability, death arises much oftener from such accidents than is generally imagined.

Case of Ileus, in which, from enormous distention, the Cæcum occupied the Situation of the Transverse Colon.

Richard Hoar, S. æt. 50, was admitted from the San Josef on the 26th, with obstinate constipation of five days' standing, singultus, stercoraceous vomiting, &c. and died on the 22nd of May 1839.

Section cadaveris 21 hours P. M.—The abdomen was very much swollen and tympanitic, from its peritoneal cavity, containing a large quantity of serum, and the small intestines being much distended with flatus. Within two inches of

the extremity of the ileum, a strong membranous band, probably the product of former inflammation, extended across the gut, from the lateral wall to the mesocolon, to which it was firmly attached; yet notwithstanding the lower portion of the ileum together with the cæcum, had been forced upwards into the epigastrium, so as to occupy the situation of, and during life to be mistaken for the transverse colon, the ileo-cæcal valve was much thickened and diseased, and nearly as hard as cartilage; and the cæcum had a black sphacelated appearance; and was enormously distended with feces and gas, thus producing all the effects of a double strangulation. The serous and muscular tunics still retained some tenacity, but the mucous coat was quite disorganized. The stomach, liver, and also the contents of the chest were healthy, but much encroached upon by the diaphragm, pressed upwards by the unnatural position of the cæcum.

Case of Intermittent Coma, from Diseased Brain, and Rupture of the Anterior Artery of the Cerebellum.

John Richards, S. æt. 50, after having been, according to the case, in a comatose state for three days, from which every effort to rouse him had failed, exhibited symptoms of re-action, and subacute meningitis; in which condition he was admitted on the 17th and died on the 23d May, 1839. The alternations of torpor and excitement in this, as well as other cases, though the cause was organic, and progression was very remarkable: the patient, at one time lying in a low, muttering, or almost insensible state—with tremors, or alternate extension and retraction of the left limb—and apparently in *extremis*;—and at another period lying so much revived as to be able to swallow, protrude the tongue, and answer questions, though frequently incorrectly, as that he was “very well”—and to notice those around him. The similar conditions of the above artery, and of the aorta, from the deposition of osseous matter, as developed by dissection, is worthy of attention.

Secutio cadaveris, 18 hours P.M. The arachnoid membrane, on exposing the surface of the brain, appeared opaque and milky, and was raised from its convolutions by gelatinous effusion. A considerable quantity of a bloody fluid, with semi-coagulated clots, found at the base of the brain, which further examination proved to have proceeded from the rupture of a small true aneurism of the size of a quill, and filled with colourless clots of the anterior artery of the cerebellum, about three-quarters of an inch of its origin from the basilar artery; a perforation sufficient to admit the probe having taken place in its anterior aspect. The coats of the artery presented distinct ossific deposits, feeling gritty internally; the left side of the cerebellum was wasted, soft and diffuent, and resembled the appearance of curdy pus; particularly over the seat of the arterial disease, which may probably be attributed to the pressure of the effused blood. The lateral ventricles were distended with bloody serum; but the brain was in this case natural. The lungs were healthy—the heart slightly dilated. The aorta was sacculated, and its elasticity impaired by extensive ossific deposition, presenting bony scales, as large as a sixpence, and easily detached. The tricuspid valves were thickened, but the rest of the vascular system, as far as examined, appeared to be normal. The abdomen did not present any change worthy of notice.

Joseph Rowe, was another case of *arachnitis*, during last quarter, which besides congestion, subarachnoid effusion, serum in the ventricles, &c. exhibited a very extensive deposit of little semi-cartilaginous bodies, in the sub-serous cellular tissues of the diaphragm, stomach, spleen, mesocolon, &c.; they formed small, generally round, well-defined spots, or patches, and were confluent like small-pox all over the surface of these organs. While on this subject, I may briefly notice that in a patient named *Malcolm Marshall*, recently under surgical treatment, for an abscess of the thigh, nearly well—and who had not betrayed any previous

indications of cerebral disease, comatose symptoms unexpectedly appeared, and terminated fatally in a few days. Upon dissection a portion of the upper and anterior part of the posterior lobe of the right hemisphere, appeared like a red, vascular mass from the effusion, or exhalation of blood from numerous small vessels; and to the anterior extremity of the right olfactory nerve, which was much thicker than natural, a tubercle of the size of a large pea, and maturing in the centre was attached; while a similar body, but still larger, was imbedded in the optic thalamus of the same side. Tubercles were also interspersed through the lungs, which adhered to the costal parietes; and from similar depositions in the sub-serous tissue, the intestines appeared studded, as if with a thick crop of small pustules; which proved to be numerous tubercles of a yellowish colour, elevating the peritoneal coat. The upper surface of the liver, which was intimately adherent to the diaphragm, also exhibited numerous patches of tuberculous depositions.

Case of Phthisis with the Foramen Ovale open.

This was one of those instances in which the communication between the right and left cavities of the heart had continued unclosed, without producing *cyanosis*; and in which state, indeed, the pensioner had completed his allotted period of servitude in the marines, and had attained the rank of sergeant; and, so far as I could learn, without having suffered any particular inconvenience; until from the increasing size, and weakness of the right auricle, with the adherent, and very condensed state of the diseased lungs, the functions of circulation and respiration became more and more embarrassed. The symptoms were, cough, increasing dyspnoea, with a puffing or blowing motion of the lips (which were not discoloured) during respiration; anorexy; emaciation; great prostration and faintness; latterly approaching to syncope, on attempting to get up; with the pulse generally about 100, but very weak, irregular, and intermitting. These distressing feelings were much relieved by wine and stimulants; but especially by the sustaining power of (the muriate of) morphia; and he always expressed himself much revived and comfortable after having taken the anodyne draught.

Sec tio cadaveris, 20 hours P.M.—The lungs, on both sides, were universally adherent, and studded with crude tubercles, particularly the right lung, which was besides so much congested with bloody serum, and so condensed in structure, as to weigh 2lb. 11oz., while the left weighed 1lb. 8oz. The heart was rather larger than natural; the walls of the right auricle, which was enlarged, were remarkably thin, and the septum which ought to have closed the *foramen ovale* was found to be partially open and cribriform in its anterior part. One of the openings was sufficiently large to admit the top of the little finger. The valvular apparatus did not seem to be abnormal. The abdomen contained some turbid primrose-colored fluid, and the intestines were agglutinated together by lymph, which was effused in large quantities in the pelvis. Incipient ulceration existed in the ilium. The stomach was large, as was likewise the liver, which was pale and friable, and weighed 4lb. 9oz. The gall-bladder was much distended, the kidneys were pale, the body was emaciated, and the limbs œdematous.

Case of Phlegmonous Erysipelas remarkable for the great rapidity and extent of Disease in a short period.

John Duncan, S. æt. 38, who was stated to be then in his usual health, had pulled from the flag ship, in harbour, to Plymouth Sound, in one of the cutters, on Thursday, the 4th April—went on shore, on leave, afterwards—was seized the same evening with severe pain in the left arm, which soon extended to that side of the chest—was prescribed for by the surgeon on Friday, and brought to the hospital on Sunday, at 11 A.M., in a dying state, and expired early next

morning. The symptoms on admission were, great dyspnoea and pain, with increasing tenderness and tumefaction of the left arm and side of the chest, cough, mucous rattle, cold clammy skin, pale countenance, great anxiety and restlessness, and a very weak pulse; which sunk so rapidly as soon to be imperceptible at the wrist. Any measures which could then be attempted were of course only palliative, and afforded but little relief; and, after a night of great suffering and restlessness, he died on Monday, at 5 A.M.

Sectio cadaveris, 30 hours P.M.—There was much diffused swelling above the clavicle, and extending downwards, as far as the lower margin of the great pectoral muscle, yielding a doughy feeling of indistinct fluctuation, as if from some fluid effused in the subcutaneous and intermuscular cellular tissues. On the first incision, purulent infiltration of the tumid parts became evident; and its extent was then carefully traced by Mr. Male. The loose reticular membrane connecting the cervical and brachial plexuses of nerves was saturated with pus. The disease pursued the course of the carotid artery and jugular vein, as far as the thyroid cartilage; extended under the clavicle; surrounded the subclavian vein; burrowed between and under the pectoral, subscapular, and latissimus dorsi muscles; and followed the course of the brachial vessels and nerves nearly as far as the elbow-joint. There was œdema, but little or no external discoloration during life, to indicate such extensive destruction of parts. The pectoral muscles were paler, and more easily lacerated than the unengaged ones. The thorax was then opened—the left lung appeared collapsed, and the secretion of some gaseous, as well as nearly a pint of bloody sero-purulent fluid had taken place in the cavity of the chest. The pulmonary costal and diaphragmatic pleuræ were intensely inflamed; but the lung which adhered slightly posteriorly was not much congested. The liver was large and engorged with blood.

Case of Chronic Inflammation and Scirrhus of the Pylorus and Pancreas—with Ulceration of the Duodenum, &c.

Mr. James Keating, æt. 25, who had returned from the West Indies on the 30th of June, since which time he had been under the care of a private practitioner, was admitted into this hospital in the last stage of atrophy, from constant vomiting, of a dark bilious-looking fluid, on the 29th July, and died on the 1st August. Neither medicine nor nourishment could be retained; and it is needless to say, not the slightest hope of his recovery was entertained upon his admission. He had been subject to vomiting two or three times a day, and confined to his cot from May until the middle of October 1838, during which period he was reduced to the utmost degree of debility and emaciation, when he was sent to the hospital at Havannah. Soon after he rejoined his ship. On the 7th of November the vomiting returned; and during the passage homewards recurred generally twice a day; and since his arrival it had continued without intermission.

Sectio cadaveris, 18 hours P.M.—The whole body was reduced to a state of extreme atrophy. The contents of the thorax were perfectly healthy. On opening the abdomen, the large size and streaky appearance of the stomach, and the turgid state of the intestinal veins attracted attention. The stomach, which contained a quantity of fetid dark green fluid, was hypertrophied, and extensively ecchymosed, especially towards the pylorus, which was thickened, but not contracted. The whole of the mucous surface of the duodenum, as far as the opening of the biliary and pancreatic ducts, was the seat of destructive ulceration and greenish sloughs; and immediately below this part, it suddenly contracted so much as scarcely to admit the little finger; but below, it reassumed its natural appearance. It was removed with great difficulty in consequence of its firm connexion with the pancreas, which was so indurated as scarcely to allow the knife to pass through its structure; while its greater extremity was so much

enlarged as to displace the duodenum forward. The pancreatic duct, which was nearly as large as a goose-quill, and the radicles, were filled with pale thick pus; and several cells contained calcareous deposits in shape and size as large as peas. This mass of disease compressing the vena portæ accounted for the turgid state of the intestinal veins. The liver appeared healthy; but from the difficulty of emptying itself, the gall-bladder was distended to the size of a large winter-pear—its contents were thick, and of a hemlock green colour, not like healthy bile. The cystic was distended as far as its entrance into the common duct, where some obstruction had taken place. The spleen, kidneys, &c. were natural, and the mesenteric glands were not much enlarged.

Case of Peritonitis and Scirrhus.

Although disposed to believe the heterologous formation to be described in this very curious case, (and which I have called Ichthoid, from its resemblance to fish in colour and general appearance,) to be of constitutional origin, and its *locale* to be chiefly in the subserous filamentous tissue—and therefore in deference to the eminent authorities of Dr. Carswell, and other pathologists, I have classed it as a variety of *scirrhus*, yet I do not feel altogether satisfied of the pathological correctness of doing so, or, at least, if rightly so classed, of grouping as mere varieties of the specific divisions many anomalous growths, differing in anatomical and physiological characters, and in malignancy, under the generic term of *carcinoma*: but as I have neither space to adduce my reasons, nor have had sufficient opportunities of investigation, to entitle my doubts upon the subject to much attention, I shall proceed, without further remark, to detail the remarkable case in question.

Robert Burden, marine, æt. 32, was admitted from Pembroke Yard, on the 27th October, and died on the 26th December, 1837. He had suffered from influenza in the Spring, followed by severe dyspepsia, gastro-enteric pain, and progressive emaciation. The chief symptoms were great abdominal tenderness, and, except when under the influence of opium, that unhappy yearning, discontented look, so indicative of visceral disease; the pulse weak, and generally about 100; complete anorexy, and frequent sickness, but apparent inability to vomit; torpid bowels, with such extreme atrophy as to resemble, if not surpass, in extenuation “*L’Anatomie Vivante*”; indeed, latterly, when he could not lie down, with the eyelids closed, and a spot of hectic on the cheek, he might be compared to a sitting painted corpse.

Sectio cadaveris, 32 hours P.M.—Besides the body being so atrophied, the eyes were sunk in their orbits, and sloughing of the cornea, &c. had commenced. A large rose-formed warty excrescence protruded from the navel, but did not appear to have any vascular connexion with the diseased parts within. There was a large quantity of fluid in both cavities of the thorax and abdomen, especially the former; but with the exception of slight pleural adhesion, the lungs, pericardium and heart, appeared to be healthy. In the abdomen the ravages of disease were manifested to an extraordinary extent. The parietal and visceral reflexions of the peritoneum exhibited a dark red, or purple, ecchymosed appearance; mottled with small white spots; and the intestines were agglutinated by the effusion of lymph. Indeed the stomach, liver, pancreas, colon, &c. were accreted into one mass, defying intelligible description. The stomach was contracted into deep rugæ, and marbled by tints of a yellow, vivid, and deep red, and black colours, and its capacity greatly diminished by the density of its coats, caused by a copious deposit of a scirrhous or semicartilaginous appearance. It was most abundant at the great end, and in the large intestines; the walls of which, and the duplicatures of the peritoneum, were much thickened by this morbid deposition. In a less, or earlier stage, it also existed in the small, but to a much greater extent in the large intestines. The liver was con-

gested, and the spleen small, but the internal structure of these organs and of the kidneys appeared normal. On making a transverse section of the large intestines, and especially of the descending colon, the calibre of the gut appeared much contracted, as already observed; being encircled by a broad ring of the same dull-white, yet glistening fish-like substance, resembling skate, but friable, and of a firmer consistence, and which varied from half an inch to upwards of an inch in thickness. Except slight intervening traces of tuberculous matter between the mucous and muscular coats, they seemed to be healthy, and their cohesive and cellular connexion unaffected; but these subjacent coats were so completely disconnected from the serous coat, by the interposition of this ichthoid product, that large portions (I might even say yards,) of the former could be drawn out from the latter with the utmost facility: and, taken altogether, this was perhaps one of the most extraordinary cases on record.

Royal Hospital,
Plymouth, 22d August, 1839.

DAVID J. H. DICKSON.

CARBONATE OF IRON AS AN ANTIDOTE TO ARSENIC.

(To the Editors of the *Medico-Chirurgical Review*.)

Gentlemen,—Being a subscriber to your valuable periodical, since 1820, I have had an opportunity of becoming acquainted with the principal discoveries connected with medico-chirurgical science, as well as the opinions of the leading members of it, for which I take this opportunity of offering you my small tribute of acknowledgement.

I was aware of Dr. Bunsen of Gottingen's plan of administering the hydrated peroxide of iron as an antidote to arsenic. I have also read the case of M. Deville, successfully treated by the tritoxide of iron and the experimental researches on the oxides of iron from the *Revue Medicale*.

As the two following cases, which have fallen under my own observation and management, may prove useful in farther illustrating the effects of iron, as an antidote to arsenic, I think it may be of some practical benefit to have them generally known, and if you think them worth publishing you are at liberty to do so.

Case 1.—J. Davis, aged 12 years, brought by his mother to my surgery, April 26, 1839, twenty minutes after eight A.M. having swallowed, by mistake, about a teacupful of a solution of white oxide of arsenic, which had been prepared to cure the itch, with which some of the family were afflicted.

Symptoms.—Violent retching and vomiting. (he fortunately had taken his breakfast just before.) Excessive thirst, and intense sensation of burning in the throat and stomach; breathing difficult; great tremor of the whole body and inability of controlling the muscular action of the limbs.

Treatment.—℞. Ferri carbon ʒij. p. g. acaciæ ʒj. aquæ Oss.* ft. haust. s.a. Immediately rejected. Ferri carb. cretæ pptæ aa ʒij. p. g. acaciæ ʒj. aq. et liq.

* The reason of administering so large a quantity of water, was to diffuse the antidote over a larger surface of the coats of the stomach.

calcis $\bar{a}\bar{a}$ \bar{z} ij. were retained in the stomach. He took four such doses, but after the third, all symptoms of poisoning ceased. The lad drank the solution out of the bottle, which was previously full, and contained \bar{z} j. of oxide of arsenic and about \bar{z} xiv. of water. Water, I believe, at the common temperature, will dissolve about $\frac{1}{10}$ of arsenic, and I suspect the boy might have swallowed about a scruple of the oxide in the teacupful he took.

Case 2.—Mr. T. O. (a respectable tradesman,) *thinking* he had the itch, (which he had not, but a common eruption to which he is subject every Spring,) washed his body and limbs very freely, on the evening of May 8, 1840, with a strong solution of arsenious acid and sulphate of copper, but he did not know what the solution was, as it was given to him by a *friend*. Saw him about eleven o'clock A.M. of the 9th, complaining of thirst, dryness of the fauces, great uneasiness of the stomach and abdomen, and at times of a burning sensation and acute pain in the stomach; pulse hard and about 70; bowels constipated, and general uneasiness and restlessness.

Treatment.—V. sectio ad \bar{z} vij. and prescribed magnes. sulph \bar{z} ss. d. aloes co. et ess. sennæ $\bar{a}\bar{a}$ \bar{z} ss. aquæ \bar{z} vij. Two table spoonsful of which were to be taken every four hours with three of warm water, till free action of the bowels was produced. At about five o'clock, P.M. found him with all the symptoms much more intense, with the addition of retchings; great soreness in the stomach; anxious countenance; in short, with all the symptoms of poisoning by arsenic. Directed to drink decoction of flax-seed very freely, and to take immediately, ferri carb. \bar{z} i, p. g. acaciæ \bar{z} ss. in thick gruel, with directions to repeat the dose in half an hour, and then every hour till quite relieved. About two minutes after the first dose, his throat and mouth became moist; the pain ceased entirely; he dropt asleep, and slept soundly all night. Of course took no more medicine, and was quite well the following morning.

The subjects of these two cases are now living in health, and are evidences of the action of carbonate of iron in cases of poisoning by arsenic. In country towns and villages, the hydrated peroxide of iron cannot be obtained. Even in this, which is a considerable market town, we have no practical chemist, and the nearest is Messrs. Blunt, of Shrewsbury, 18 miles distant. Carbonate of iron is kept by every practitioner and druggist, and if future trials prove as successful as the above two described, the antidote will be within the reach of every one.

I have the honor of remaining,

Gentlemen,

Your very obedient and very humble servant,

P. L. SERPH,

Surgeon.

Welshpool, 15th May, 1840.

SOUPÉ À LA MINUTE.

At page 239 of No. 59, January, 1839.

Six pounds of butter, &c. &c. &c. fried with a handfull of onions and the same quantity of *ails*, you inquire what are these? *Ails* is the plural of the word *ail* (garlic).

RECLAMATION.

DR. MURPHY TO THE EDITORS OF THE MEDICO-CHIRURGICAL REVIEW.

WE give insertion to the following Reclamation, because we see in it none of those offensive personalities, those effusions of spleen, nor those petty out-breaks of wounded vanity too common in the present days of periodical literature. Dr. Murphy argues his case, and though we cannot coincide with him, and could, we conceive, show satisfactory reasons for our own opinions and against his, yet we give him the benefit of the last words. As he had the first, we think he has every reason to be satisfied; and if truth be on his side, with such logical advantages, he *must* be triumphant. Dr. Murphy, and indeed every author, may feel assured that in us he will meet with a liberal, we should not be going too far did we add—a generous critic. We feel nothing but disgust at the carping jealous spirit too frequently evinced by journalists.

In the Medico-chirurgical Review of October, 1839, a small work of mine, on "Mercury being the Cause of Secondary Symptoms," was reviewed. The doctrines then advanced being novel, and opposed to those generally received, a severe investigation of their correctness was expected and desired. The high character which your Journal has gained both for medical knowledge and impartiality was then evidenced as usual, and I regretted that the criticism was unfavorable. Had your censure been less severe, many practitioners might have been induced to put them to the test of experiment, and the result, I am still convinced, would have confirmed my views. A very eminent practitioner in this town told me that his experience had led him to adopt a treatment nearly similar to mine. In the seventh volume of the Transactions of the Provincial Medical and Surgical Association, page 238, Dr. Otto, of Copenhagen, states, "The results which were published proved the value of the method even beyond expectation, so that I now never use mercury against syphilis, effecting a complete cure of all its forms within a much shorter time than was formerly done by mercury, and *without seeing secondary symptoms arise afterwards*. Professor Windt, Dr. Muller, and Dr. Svitzer, have been equally successful with this mode of treatment, though they think that there are forms of syphilis which require mercury, and consequently now and then employ it. *I frankly confess that I have not seen such cases.*"

There is here the testimony of a most eminent Danish physician, who is simply relating the result of his observations, and many years cannot elapse without the truth of the doctrine being universally admitted. The review, I suppose, was written by the junior Editor, who, I understand, is peculiarly qualified for the task, and his affording nine or ten pages for its examination is highly commendable, especially when it is remembered that other journals would scarcely examine the doctrine. The first objection is, that there is no positive proof adduced in favor of the identity of the gonorrhœal and syphilitic poisons in consequence of the vague definition of chancre. Now I have defined chancre according to Hunter, and I really know not what stronger proof can be urged, or one with which I myself would be more fully satisfied, than if an irreproachable female newly-married is found with discharge from the vagina, painful micturition, genuine chancres and buboes, from which symptoms she was previously free, while her husband, who is anxious for her recovery, and will not on her account deceive his physician, tells him that he had gonorrhœa just previous to marriage, which again shewed itself immediately afterwards, and that on a close inspection of himself no trace of a breach of surface ever having existed can be found, I have seen several cases nearly similar, and I wish to ask any medical practitioner to what other conclusion could I have come, or what interpretation he can put on such occurrences.

The reviewer also asks what analogy can there be between specific chancre

and excoriation of the cheek? The comparison was made for the purpose of proving, beyond any cavil, that a non-specific secretion may cause an ulcer, and that this healthy ulcer may produce suppuration of a gland, and that in a similar manner gonorrhœa may produce an ulcer, and this ulcer may be attended with buboes, without there being any thing specific either in the gonorrhœa, the ulcer, or the bubo.

Experiments, however, as you justly remark, are called for, but few will be found to submit to such experiments; and they would be unjustifiable without the consent of the party, and without their nature being explained.

On chancre I have very little to remark. The facts I chiefly wished to lay before the profession have been assented to. The specific nature of a sore with callous edges and base, so strongly maintained by Hunter, and so implicitly confided in by many practitioners, is ridiculed.

That any other ulcer may present the same appearance is allowed, but that the structure of the part modifies the appearance of an ulcer is almost denied. The impression on my mind still is, that the structure changes the appearance of a sore, but perhaps I may be mistaken. Ulcers on the pubes, although their bases and edges are hard, have their edges raised, which is not the case with ulcers on the glans penis. That the structure gives a peculiar character to an ulcer, and requires a peculiar mode of treatment, is borne out by a very recent case. A healthy man, aged 30 years, had an ulcer, of 12 months' duration, in the right angle of the lips; it was excavated, foul, and irregular, it had eaten away to the size of a sixpence on the inside of the upper part of the cheek, and nearly to the same extent on the lower, the peculiar hardness of the edges of the ulcer, which were partly formed by the labiæ, struck me as being similar to chancre, a form of ulcer which soon yields to mercury. A gentle salivation was excited, and the sore immediately healed.

That bubo may and usually does arise from irritation, is also conceded. To prove that it never arises from absorption, I will not attempt, as I do not mean to deny it. But if it be absorption, and not irritation, that causes a venereal bubo, it is difficult to account for the following facts. The venereal poison enters the circulation—it must, therefore, be present in every gland of the body, and must have passed through the second order of glands. Why, then, do no glands enlarge except those of the first order?

There has been no answer given as to how matter taken from a venereal bubo causes no disease in a healthy subject, while it produces, or rather is said to produce, such a train of symptoms in the affected individual.

It must also be remembered, that the variolous and vaccine matter enter the circulation without producing any enlargement of a lymphatic gland. In scarlatina no glands enlarge except those of the neck, and on inspection there will be found ulceration of the fauces.

Ulceration of the throat is also admitted to be an effect of mercury, but it is insisted that it is also produced by venereal, and because the ulcer will sometimes be very obstinate until mercury is used. This is regarded as an irresistible argument in favour of its syphilitic origin; but mercurial rheumatism sometimes will yield to no other remedy. My argument is, that mercury leaves the constitution peculiarly liable to be acted upon by cold, the throat inflames, and the consequent ulceration cannot be healed until the inflammation be subdued. This we daily witness in sore legs. Mercury relieves the inflammation, and cicatrization commences.

I have no recollection of ever having met chronic ulceration of the throat which was not healed by other remedies. If a large ulcer perforates the velum palati, without extending to its free margin, it will almost immediately commence healing on the division of the bridle: but unless the ulcer be very large, there is an objection to this mode of treatment, as the voice usually becomes nasal.

There is however one important admission on the part of the reviewer which must tend to a more exact knowledge of this disease, if acted upon by the profession. It is, "That he has no hesitation in expressing his opinion, that nodes are in the immense majority of instances the result of the abuse of mercury." He does not advocate the whole of my doctrine on this point, but refers to one case of syphilitic origin in a gentleman from Edinburgh, who could not, unless a professional gentleman, be positive whether mercury had been used or not, and who ought to have been asked whether he had taken mercury for any other complaint. He has argued, in the same page, that an ulceration of the throat which cannot be healed until mercury be exhibited, must have a syphilitic origin, and yet he himself immediately afterwards declares, *ex cathedra*, that nodes are mostly the result of mercury, whereas there is no practitioner but must acknowledge, that of all diseases, there is not one which more rapidly yields to this remedy, or which more obstinately resists any other. But these contradictions must continually occur even in the best informed practitioners, until the plain simple view of the disease be taken which I have pointed out, and which is now acted upon by the Danish physicians.

That mercury should be altogether proscribed in the treatment of syphilitic complaints is a doctrine which I have never advocated, on the contrary, I stated that both chancres and buboes are more speedily removed by it, than by any other remedy. I only wished to caution practitioners against confounding the effects of a remedy with the symptoms of a disease. During the last year I have treated several cases of syphilis without mercury, but I have not met with a secondary symptom, while those under the care of other practitioners, where mercury has been used, have occasionally come under my observation.

If the following fact is not explicable on the doctrine of mercury being a cause of secondary symptoms, I know not how it can be otherwise interpreted.

June, 1840, Henry Ashold, of the Old Swan, West Derby, presented himself at the Norton-street Institution, for diseases of the skin, with and iritis of both eyes. The appearances were the same as those termed secondary symptoms. The patient was seen by Messrs. Ashcroft and Martin. His history of the case was, that two months previously he was under the care of Mr. Swinburn for rheumatism, which was cured by salivation. The eruption appeared after having been exposed to a shower of rain. He never had syphilis. When I meet with such cases, and on the other hand, find that the non-mercurial treatment of syphilis is not followed by any peculiar symptoms, I feel that I am entitled to have the doctrine investigated more closely. It is true, I am met by the reviewer, who states that *he has seen* sores give rise to secondary symptoms. The fact of course I will not contradict, but if the man was treated in a Lock Hospital on the non-mercurial plan while others in the same ward were under the mercurial treatment, his system was exposed as much to the chance of being mercurialized as those persons who become salivated by using mercury in some of the arts, and therefore such cases must not be brought forward; or if a person be treated for a chancre which heals under a mercurial plan, and in a few months suffer from a similar disease which is cured by the non-mercurial treatment, and in some months afterwards, secondary symptoms appear, they ought not be laid to the account of the latter treatment. Cases of the latter kind must have been very common amongst soldiers, on whom Mr. Rose made his first observations.

Cases of the following kind are by no means rare. A person subject to ulceration of the throat, is liable to its appearance on exposure to cold, if he contract a chancre, and no mercury be used, the ulceration on its next return is set down as a genuine secondary symptom. Many practitioners still act on the erroneous aphorism of Boerhaave, "*In dubiis suspice lueem.*"

SOLUTIO MAGNESIÆ BICARBONATIS.

(Mr. Dinneford's Reclamation.)

THE Solubility of Carbonate of Magnesia in Distilled Water, impregnated with an excess of Carbonic Acid, has been long known to both Scientific and Practical Chemists. We might refer to Authors at hazard for this, but the following examples will be sufficient to establish the fact. In Fourcroy's Chemistry, published in 1790, vol. 1, page 273, the author states, it is "dissolved in water, saturated with aerial acid."—In the System of Chemistry, published at Edinburgh, in 1809, by the late celebrated Dr. Murray, the following sentence will be found at page 533, vol. 2: "When acted upon by water impregnated by Carbonic Acid, it (Magnesia) is dissolved."—In Thompson's Inorganic Chemistry, published in 1831, vol. 2, page 532, it is stated, "Carbonate of Magnesia dissolves in water impregnated with Carbonic Acid."—In Brande's Manual of Chemistry, published in 1836, page 627: "When a current of Carbonic Acid Gas is passed through a mixture of water and Magnesia, a clear Solution of Bicarbonate of Magnesia is obtained." The above works are the text books in the hands of every Student of Chemistry. They are written by the most celebrated Chemical Philosophers and eminent Teachers of the last half-century. Is it not surprising then, that at the present day, any person should pretend to have discovered so well known a fact? I make no claim to such a discovery, but I have used it, and shall continue to do so.

I am well aware how little importance is attached by the public to disputes, engendered and fostered by the clashing pecuniary interests of rival manufacturers and tradesmen, but a few words are due to my friends in answer to the accusations circulated in anonymous handbills (without even the the printer's name attached to them), as well as anonymous letters.

In the course of the year 1838, I was engaged in a series of *laborious and costly* experiments for discovering the most effectual means of obtaining a PURE and PERFECT SOLUTION OF MAGNESIA; and in the month of November I offered my Solution for sale to the public. Sir Jas. Murray, who had been employed on the same subject, called upon me on the 23d of December, and proposed terms of agreement between us, by which he was to surrender to me the sale of this preparation in England, whilst he reserved to himself the market of Ireland and Scotland; knowing but little of Sir James Murray *at that time*, I was ill-advised enough to listen to his proposals. Instructions were then given by Sir J. M. to an attorney to draw up articles of agreement between us.

What was my astonishment to find, that at the very moment when the lawyers were receiving those directions, the newspapers were filled with advertisements for the sale of the fluid magnesia in London. At first some apprehension seems to have been entertained by the author of these advertisements, for they were issued in the name of the "Successor of the Inventor," "Discoverer of the Process" and other disguises. By degrees, however, growing bolder, the name of "E. Murray, Chemist, 44, Regent Circus," (where no Chemist resides, the house being occupied as a Steam-Packet Office); "of Mr. B. Murray;" then of "Dr. Murray, chemist, 33, Piccadilly," which happened to be the residence of a respectable stationer; and at last, when all these subterfuges were exposed, the name of Sir James Murray was inserted in the advertisement. In this way, no doubt, it was the intention to amuse me by affected negotiations with lawyers, while the most active measures were taken for a premature occupation of the market.

Soon after my Solution of Magnesia became known to the medical world, I received an unsolicited testimonial of its value from that eminent physician, Dr. Conquest. Though I have received many such since, this at the time was very gratifying to me, and I made it public. I had no sooner done so, than Sir Jas.

Murray, in great alarm, called upon Dr. Conquest, and made such an impression upon his mind, that he expressed regret at having written my testimonial. But Dr. Conquest, in consequence of a *very natural suspicion* that an unfair statement had been put before him, cautiously guarded his remarks with the following significant sentence:—"I SAY THIS ON THE ASSUMPTION THAT ALL YOU HAVE SAID TO ME IS BASED UPON TRUTH."

It will not surprise any one, after the foregoing statement, to learn that Sir James Murray has published that letter without the *qualifying sentence*, which removes its sting.

Dr. Conquest has since expressed his regret that he should have allowed himself to be imposed upon by an *ex parte* statement of Sir James Murray, and says, "I HAVE ENQUIRED INTO THE CIRCUMSTANCE, YOU ARE AT LIBERTY TO CONTINUE THE USE OF THE CERTIFICATE I GAVE YOU."

The following is a copy of it:—

"Dear Sir,—I have been much pleased with the Bicarbonated Solution of Magnesia, and feel with many others, that the profession and the public are indebted to you for a highly valuable addition to our list of medicines. As an agreeable mild aperient it cannot fail to supersede many now in use, but which so offend the taste and the stomach, as to justify their banishment from our prescriptions.

"Yours, respectfully,

"J. T. CONQUEST.

"Mr. Dinneford, 172, Bond-street.

"Finsbury-square, July 18, 1839."

A pamphlet has lately been published by Sir James Murray, in which he attempts to support his pretensions by heaping calumnies, which he purports to be written by different persons. Among them is a Mr. Murray, whom he styles Lecturer on Chemistry at Hull. That gentleman has written to me, and after denying in the strongest terms the impudent fabrication attributed to him, says, "In proof of my sincerity, I have written to Sir James Murray to cancel my name *toto calo* in connexion with his testimonials."

Mr. Clarke, Surgeon, of the Hampstead Road, with whose name a similar gross liberty has been taken, has written an indignant denial of the offensive calumny attributed to him by the same person.

Mr. Herron, of the National Medical Hall, Dublin, has written to me, and says, "You will see by the enclosed, Sir James Murray has removed *my name* from the certificates given me, and substituted *his own*; he has broken his faith with me in every way, I shall therefore be happy to undertake your agency."

After this exposure of his recklessness of assertion, the public will know how to estimate the various productions emanating from this person. All future attacks and calumnies I shall pass without comment. My friends will easily believe that the man who can act in the manner I have related, will invent stories to justify the language he has employed. I cannot say more of them than I have already said—that all his observations are scandalously false. That which is of real value to the public is the admission of Sir James Murray himself, that "*the process had been greatly improved since his time by persons in London.*" These improvements are my discovery; they have cost me great pains and much thought. I have not only *improved* the process, but I have *exhibited* it to many of the most distinguished members of the Medical Profession in this country, who have gratified me with their thanks, as my numerous certificates will show. I offer my Solution of Magnesia to the Public in the utmost state of PURITY, and I know it is, and WILL BE APPRECIATED.

CHARLES DINNEFORD,

Family Chemist to her Majesty the Queen Dowager,
and His Royal Highness the Duke of Cambridge.

173, New Bond Street.

N. B.—MR. DINNEFORD begs to announce, that in consequence of the great improvements he has effected in his machinery, and the employment of a powerful steam engine for condensing the SOLUTION OF MAGNESIA, he is enabled to supply that preparation for the purposes of dispensing at a reduced price. It will therefore, in future, be sold in stone bottles containing 5lbs: at 5s. 6d. each, including the bottle. This low price will prevent the necessity of increasing the ordinary charges for medicines.


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I N D E X.

Abdominal tumor, case of.....	505	Auscultation, Dr. Benson on.....	150
Abortion, Mr. Streeter on.....	178	Auscultatory signs of phthisis	494
Abscess, hepatic	535	Avulsion, Dr. Macfarlane on.....	150
Absurd practice in Parisian hospitals	193	B.	
Academie Royale de Medecine	415	Ballarger on the cerebral convolutions	426
Action of tobacco	344	Balanitis, Mr. Johnson on.....	152
Acute pleuropneumonia, statistics of	428	Balanitis, causes of.....	153
Acute hydrocephalus, Dr. Davis on ..	465	Balanitis, treatment of	153
Acute ophthalmia	476	Bandage, Mr. Chapman on	154
Adipose tumors	372	Barbarous operation for fistula	549
Adipose cysts	373	Barlow on albuminous urine.....	263
Adipose tumor, laminated.....	373	Bauden's on glandular swellings	220
Affections of the cornea, inflammatory	54	Benson on auscultation	150
Affections of the membrana tympani	78	Berlin, medical relief at.....	353
Affections of the mucous membrane,		Berlin, hospitals at.....	359
nitrate of silver in	273	Bethlem Hospital, report from	545
Africa, Western, military report from	2	Blepharitis	51
Age, influence of, on mortality among		Blepharitis, purulent of infants ...	51
troops	46	Blisters, Mr. Ure on	154
Agues, influence of splenic engorge-		Blood, milky, cause of	532
ments on.....	196	Bloodletting, Mr. Wardrop on	155
Air, introduction of, into the veins ..	275	Bodies, preservation of, for dissection	536
Albuminous urine, Dr. Bright on....	251	Bone, diseases of, Mr. Wells on ...	155
Albuminous urine, cases of dropsy with		Bones, enchondroma in the	364
Albuminous urine in connection with		Bottex on insanity	218
scarlatina	254	Brain, Law on disease of the	279
Albuminous urine, Dr. Barlow on....	263	Bread, unfermented	284
Algoa Bay	29	Breast, cancer of the, in a male	556
Alison on inflammation	83	Breasts, inflammation of the.....	112
Amaurosis, functional	242	Breschet on glanders	231
Ammon on iritis.....	512	Bright on renal disease	261
Ammoniacal pomade, M. Trousseau on	203	Bright's kidney the cause of albumi-	
Amnion, dropsy of the	99	nous urine	563
Amputations, statistical reports of ..	551	Brodie, Sir B. testimonial to.....	285
Amputations, mortality after	552	Bronchotomy, Mr. Wells on	155
Amputations, statistics of	559	Bubo, Mr. Johnson on	156
Analyses of mineral waters at Brighton	569	Bubo in a healthy habit.....	156
Analysis of tobacco	343	Bubo in a scrofulous habit.....	157
Anatomical observations on glands ..	191	Bubo in a cachectic habit	158
Anatomist's vade-mecum, Mr. Wilson's	580	Bubo, treatment of	158
Anatomy of suicide, Mr. Winalow's..	161	Bubo, indurated, local treatment of..	159
Anatomy, comparative of the nervous		Bubo, suppurating, treatment of	159
system.....	173	Burns and scalds, Mr. Ure on	160
Anatomy of glands	190	C.	
Anatomy, studentships in	283	Cæsarian operation, cases of	521
Andral on experiments	508	Calcutta, cases of hydrocele at.....	284
Antimony, fatal effects of tartrate of	215	Campbell on extra-uterine gestation..	175
Apoplexy of the lungs	496	Cancer, Dr. Muller on	119
Arborescens lipoma	373	Cancer, Muller on	362
Army, Belgian, ophthalmia in the....	207	Cancer, Dr. Walsh on	362
Arsenic, peroxide of iron, in poisoning by	534	Cancer, nosological position of	381
Arthritic ophthalmia	59	Cancer, physiology of.....	383
Artificial nipple of ivory	535	Cancer, effects of, on adjoining parts	385
Ashwell on undue lactation	241	Cancer, mortality from	392
Asphyxia, Mr. Lucas on.....	148	Cancer of the breast	556

Cape Coast Command, medical report	12	Cornea, coloration of the	54
Cape of Good Hope	22	Costello's Cyclop. of Practical Surgery	148
Cape of Good Hope, mortality at the	24	Crania Americana, by Dr. Morton	434
Cape of Good Hope, diseases of the	25	Cure of squinting	282
Capuron on convulsions during pregnancy	199	Cutaneous transplantations	200
Carbonate of iron as an antidote to arsenic	592	Cutaneous disease, Dr. Willis' illustrations of	584
Carcinoma simplex vel fibrosum	131	Cyclopædia of Practical Surgery, 148,	362
Carcinoma reticulare	133	Cysto-sarcomatous growths	378
Carcinoma alveolare	135	Cysts, adipose	373
Carcinoma melanodes	136	D.	
Carcinoma medullare	137	Davis on hydrocephalus	465
Carcinoma fasciculatum	140	Deafness, treatment of	221
Carcinoma, development and softening	141	Development of morbid growths	127
Carcinoma, chemical properties of	142	Development of caudate corpuscles	128
Carcinoma, nature of	143	Development of carcinoma	141
Carcinoma no heterologous structure	144	Development of enchondroma	368
Carcinomatous growths, minute structure of	129	Diagnosis, facility of, in general	211
Carcinomatous growths in general	129	Diagnosis, difficulty of, in certain cases	211
Cartilaginous tumors	362	Diseases prevalent a Sierra Leone	6
Catarrhal ophthalmia	478	Diseases of the ear, Dr. Williams on	73
Caudate corpuscles, development of	128	Diseases incident to pregnancy, Dr. Churchill on	95
Cazenave on scabies	198	Diseases from sympathetic irritation	160
Ceely on the variolæ vaccinæ	408	Diseases incident to childbed	109
Cerebellum, softening of both lobes of	562	Diseases of the mamma, Lisfranc on	194
Cerebral convolutions, Dr. Baillarger on	426	Diseases of old age	415
Chapman on bandaging	154	Diseases of the eye, Tyrrell on	471
Chemosis	480	Dislocation of the shoulder-joint	249
Chilblains treated with mustard baths	200	Disorders of the circulating system	102
Child-bed, diseases incident to	109	Disorders of the nervous system	103
Cholesteatoma	373	Disorders of the respiratory system	103
Cholesteatoma, general structure of	374	Dissection, preservation of bodies for	536
Cholesteatoma, microscopic structure	374	Donovan on the hydrocyano-ferrate of quina	566
Cholesteatoma, chemical relations of	375	Donovan on cod oil	566
Cholesteatoma, seats and forms of	375	Dracunculus, Mr. Clarke's case of	585
Cholesteatoma in cysts	376	Dreadnought Hospital Ship	549
Cholesteatoma on the surface of ulcers	376	Dropsy of the amnion	99
Cholesteatoma, development of	376	Dublin hospitals	71
Cholesteatoma, nature of	376	Duodenum, rupture of, &c.	586
Chorea, cimicifuga in the treatment of	282	Dyspnoea	103
Churchill on diseases incident to pregnancy	95	E.	
Cimicifuga in the treatment of chorea	282	Ear, Dr. Williams on the	73
Circulating system, disorders of the	102	Eastern Frontiers District, report from	21
Civiale on the grey deposit in urinary calculi	204	Elbow-joint, Key on excision of the	247
Cleland on tobacco	332	Empysema, traumatic	561
Club-foot, M. Guerin on	226	Empyema, precautions in operating for	560
Colchicum, fatal effects of	215	Enchondroma	362
Compound cystoids and cysts	377	Enchondroma in the bones	364
Compound cystoid growths	377	Enchondroma, microscopic examination of	364
Conjunctiva, chronic inflammation of	484	Enchondroma, chemical analysis of	365
Connections of the placenta	237	Enchondroma of the soft parts	368
Constitutional consequences of pregnancy	96	Enchondroma, nature of	369
Convalescence of puerperal women	109	Enchondroma, local causes of	369
Convulsions during pregnancy	199	Enchondroma, general causes of	369
Cooper on the treatment of stricture	244	England and France, ophthalmic surgery in	49
Cornea, inflammatory affections of	54	England, medical tour in	62
		English obstetrics, remarks on	223

Epidemic hemeralopia.....	223	Hingeston on dislocation of the shoul-	
Epilepsy, oxide of silver in	296	der-joint	249
Epileptic convulsions	105	Hip-joint, injury of the.....	555
Europe, importation of tobacco into	338	History and property of tobacco	332
Eustachian tube, inflammation of the	80	History of tobacco	334
Exanthematous ophthalmia	467	Holland and Germany, operative mid-	
Excision of the elbow-joint	247	wifery in	521
Excision of the elbow-joint	549	Hospitals in London	66
Experiments, M. Andral on	508	Hospitals, clinical instructions in....	69
Extra-uterine gestation, Mr. Camp-		Hospitals, Dublin	71
bell on.....	175	Hospitals of Malta	280
Eye, Dr. Franz on the	184	Hottentot troops	33
Eye, Tyrrell on diseases of the.....	471	Hudson on the use of nitrate of silver,	273
Eye, examination of the.....	472	Hydrocele, cases of, at Calcutta	284
Eye, treatment of diseases of the....	473	Hydrocephalus, Dr. Davis on.....	465
F.		Hydrocephalus, symptoms and diag-	
Facility of diagnosis in general.....	211	nosis of	465
Fallacies in surgical works	211	Hydrocephalus, predisposing causes of	466
Fatal effects of colchicum, &c.	215	Hydrocephalus, exciting causes of ..	467
Femur, fractures of the neck of the..	564	Hydrocephalus, proximate cause	467
Femur, congenital subluxations of the	520	Hydrocephalus, treatment of.....	468
Fever, flaccid state of the	562	Hydrocyanoferrate of quina, Dono-	
Fistula, barbarous operation for	549	van on the	566
Fracture, ununited.....	553	Hydrophthalmic, successful treatment of	274
Fractures, weight and pulley for	47	Hysteritis	99
France and England, ophthalmic sur-		I.	
gery in	49	Iceland, diseases of.....	424
France, new system of weights in....	529	Imperforate vagina, case of	568
Franz on the eye	184	Importation of tobacco into Europe..	338
Frequency of the pulse in infants....	512	Incontinence of urine in pregnancy ..	107
G.		Incontinence of urine in old age	513
General management of pregnant wo-		Infantile remittent fever, Dr. Locock on	87
men	97	Inflammation of the Eustachian tube,	80
Genital organs, diseases of in pregnancy	97	Inflammation, Dr. Alison on.....	83
Gestation, existence of milk in urine		Inflammation of the breasts	112
during	270	Inflammatory affections of the cornea	54
Gipsies metamorphosed.....	334	Influence of age on the mortality among	
Glanders, Rayer, and Breschet on....	231	troops	46
Glands, natural order of.....	190	Injuries of the hip-joint.....	555
Glands, intimate structure of.....	191	Insanity, abolition of restraint in....	542
Glands, anatomy of	191	Insanity, M. Bottex on	218
Glandular swellings, M. Baudens on..	220	Involuntary seminal discharges.....	533
Guerin on subcutaneous wounds	225	Iodide of potassium, death from	550
Guerin on club-foot, wry neck, &c....	226	Ioduret of iron for syphilitic ulcers ..	534
Guerin on subcutaneous orthopædy..	519	Iritis, M. Ammon on.....	512
Guerin on subcutan. incision of joints,	519	Iron, peroxide of, in poisoning by	
Guthrie on the division of the rectus,	537	arsenic.....	534
Guy's hospital reports	241	Ivory, artificial nipples of	535
H.		J.	
Hæmatemesis	101	James' retrospective address in surgery	47
Hæmitis, M. Piorry on	501	Johnson on balanitis	152
Hæmoptysis	103	Johnson on bubo	157
Hamstring tendons, divisions of the..	281	Journal of a medical tour in England,	62
Health of the navy.....	320	K.	
Heart, palpitation of the.....	102	Keratitis	54
Heart, M. Pigeaux on diseases of the,	493	Keratitis, sequelæ and complications of	57
Heart, flaccid state of the, in fever ..	562	Key on excision of the elbow-joint ..	247
Heart, rupture of, into pericardial sac,	571	Knee, wound of the	248
Hemeralopia, epidemic	223	L.	
Herniæ, M. Malgaigne on	229	Labia, œdema of the	97
Herniæ, statistics of	230	Labia, sanguineous tumor of the	113

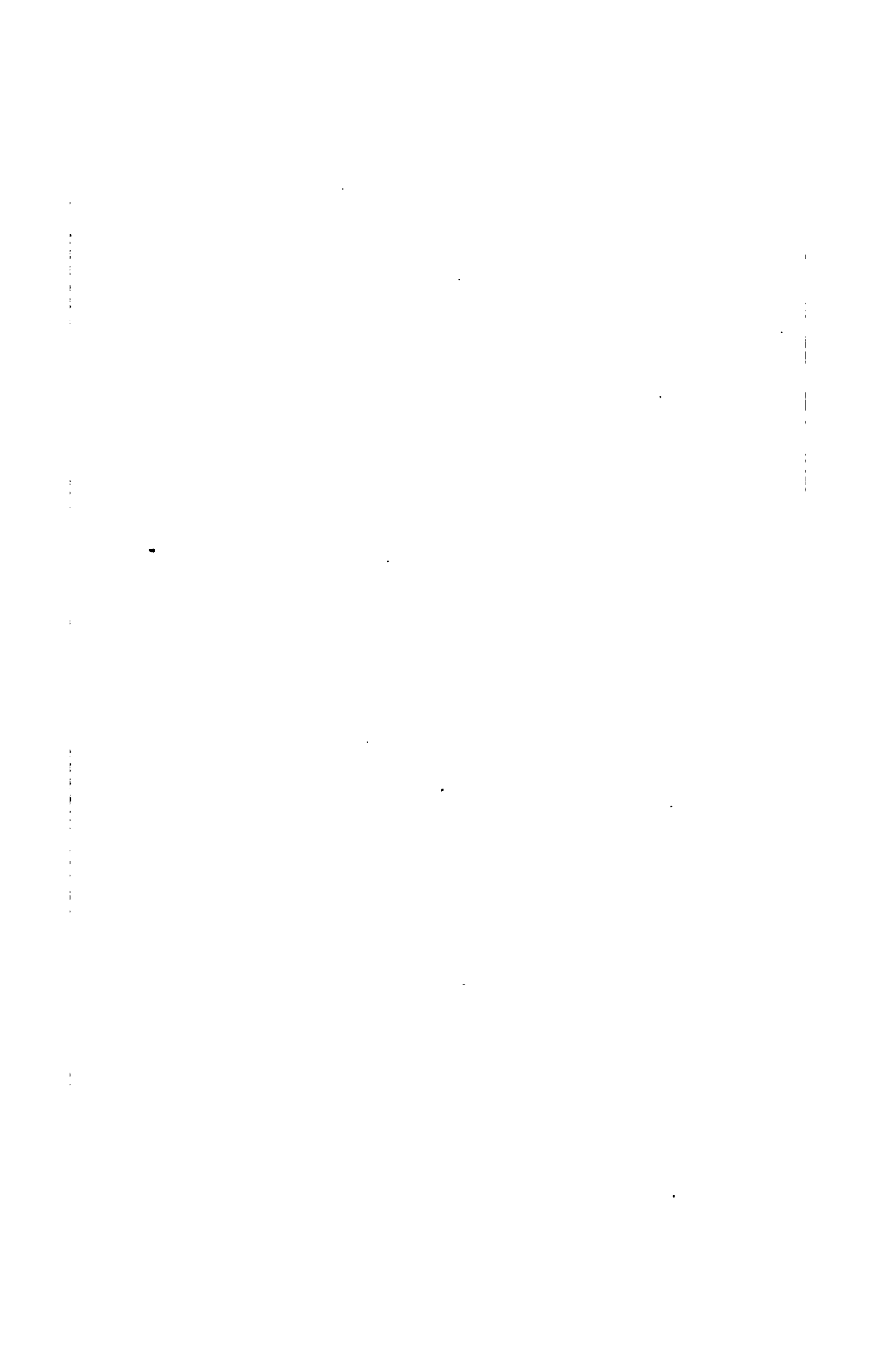
- Lactate of iron, remedial power of the 511
 Laminated adipose tumor 873
 Lane on the oxide of silver 289
 Law on disease of the brain 279
 Lecanu on the urine 432
 Leech gathering in Russia 573
 Leucorrhœa, vaginal 98
 Library of Practical Medicine..... 81
 Ligamentum patellæ, rupture of the.. 554
 Lipoma 372
 Lipoma simplex 372
 Lipoma mixtum 373
 Lipoma arboreascens 373
 Lisfranc on medicine and surgery.... 193
 Lisfranc on diseases of the mamma .. 194
 Lisfranc on fallacies in surgical works, 211
 Local consequences of pregnancy.... 96
 Local paralysis, German treatment of, 535
 Locock on infantile remittent fever .. 87
 Locock on puerperal fever..... 92
 London hospitals 46
 Loss Island, mortality at 11
 Lower jaw, rigidity of the..... 567
 Lucas on asphyxia 148
 Lungs, apoplexy of the 496
 Lungs, state of the, in whooping-cough 564
 M.
 Macfarlane on evulsion 150
 Magnetisme animal, manuel pratique, 575
 Malformation of œsophagus 569
 Maligne on herniæ 229
 Malta, hospitals of 280
 Mamma, Lisfranc on diseases of the.. 195
 Massachusetts's general hospital..... 559
 Mastodynia 106
 Maternal management of children, Dr.
 Bull on..... 579
 Mauritius, medical report from the .. 35
 Mauritius, diseases of the 39
 Meatus auditorius, examination of the 74
 Mechanical pressure, disorders arising
 from 107
 Medical tour in England 62
 Medical meteorology 212
 Medical statistical report, naval 297
 Medical relief in Rome and Prussia .. 345
 Medical puffing 510
 Medical Association, Ireland, resolu-
 tions of 572
 Medicine, new terms in 48
 Medicine, Practical, Library of 81
 Medicine and surgery, Lisfranc on .. 193
 Membrana tympani, affections of the.. 78
 Membrana tympani, ulceration of the, 78
 Memoires of the Academie Royale de
 Medicine..... 415
 Meredith on parochial medical relief, 168
 Microscopic charac. of morbid growths 124
 Military medical report. Tulloch's.. 1
 Milk, existence of, in the urine during
 gestation 270
 Milky blood, cause of..... 532
 Mineral waters, analyses of 569
 Minute structure of carcinoma 129
 Monesias, notice sur le 174
 Montrose lunatic asylum 542
 Morbid growths, uncertain external
 character of..... 119
 Morbid growths, chemical examina-
 tions of 123
 Morbid growths, gelatinous 123
 Morbid growths, albuminous..... 123
 Morbid growths, microscopic charac-
 ters of 124
 Morbid growths, development of 127
 Mortality at Sierra Leone 6
 Mortality at the Cape..... 24
 Mortality of troops in the Mauritius, 36
 Mortality among troops, influence of
 age on 46
 Mortality of officers 46
 Morton's Crania Americana 434
 Mucous blepharitis..... 52
 Müller on cancer..... 119, 362
 Müller on secreting glands..... 189
 Müller's elements of physiology 581
 Murphy, Dr. his reclamation..... 594
 Mustard-baths for chilblains..... 200
 N.
 Nature of enchondroma..... 369
 Naval medical statistical report..... 297
 Naval med. officers, advantages to ... 573
 Necrosis 48
 Nervous system, disorders of the 102
 Nervous system, comparative anatomy
 of the 173
 New terms in medicine 48
 New operation for tapping..... 548
 Nitrate of silver in diseases of the
 mucous membrane..... 273
 Norris' report of surgical cases..... 553
 Notice sur le monesias 174
 Novel monstrosity 516
 O.
 O'Beirne on the treatment of hydrop-
 thalmie 274
 Obstetric medicine, Dr. Ramsbotham's 286
 Œdema of the labia 97
 Œsophagus, malformation of..... 569
 Officers, mortality of 46
 Old age, diseases of 415
 Operation for stone 419
 Operation for prolapsus recti..... 515
 Operation for the cure of squinting .. 537
 Operative surgery of tumors..... 275
 Operative midwifery in Holland and
 Germany... 521
 Ophthalmia in the Belgian army 207
 Ophthalmia, purulent, of children... 209
 Ophthalmia, simple acute 476
 Ophthalmia, pustular..... 478
 Ophthalmia, purulent..... 479

INDEX.

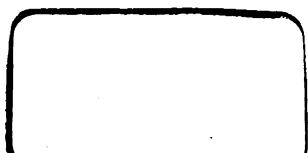
v

Ophthalmia, exanthematous	487	Quain's plates	580
Ophthalmic surgery in France and England	49	Queen's hospital, Birmingham, address	578
Orfila on poisoning.....	428	R.	
Orthopædy, subcutaneous, M. Guerin	519	Radial artery, ligature of the.....	554
Otitis	75	Ramsbotham on obstetric medicine ..	285
Otorrhœa	76	Rare cases, on the study of	547
Oxide of silver, Lane on the	289	Rayer on glanders ...	231
P.		Rectus muscle, Guthrie on the division of the	537
Palm of the hand, wound of the	554	Rees on the proportions of urea	268
Paracentesis thoracis, suggestion in..	492	Remarks on stammering	489
Parochial med. relief, Mr. Meredith on ..	168	Remedial power of the lactate of iron ..	511
Pathological facts	561	Reminiscences of Rome	345
Penny postage, benefits of the	545	Renal disease, Dr. Bright on	251
Pharmacopée universelle	580	Report of the vaccination section	397
Phlebitis, uterine	114	Resolutions of Medical Association of Ireland ...	572
Phthisis, auscultatory signs of	494	Respirator	286
Physiological corollaries on secretion ..	192	Respiratory system, disorders of the..	102
Physiology of ventriloquism	527	Restraint in insanity, abolition of....	542
Pigeaux on diseases of the heart	493	Retrospective address in surgery ...	47
Piorry on hæmitis	501	Re-vaccination	404
Placenta, structure and connections of ..	237	Revulsion	81
Pneumonia, statistics of.....	491	Rigidity of the lower jaw	567
Pommade ammoniacale, M. Trousseau on the	203	Rome and Prussia, medical relief in..	346
Poor in Prussia, medical relief of the ..	345	Rome, reminiscences of.....	345
Practical medicine, library of	81	Rome, hospitals in	346
Practical surgery, Cyclopædia of	148	Rome, medical administration of the hospitals in	347
Precautio in operating for empyema ..	561	Rupture of the ligamentum patellæ ..	554
Pregnancy, consequences of	96	Rupture of the heart into pericardial sac	571
Pregnancy, Churchill on diseases in- cident to	95	Roux' operation for fistula.....	549
Pregnancy, menstruation during	98	S.	
Pregnancy, convulsions during.....	199	St. Helena, state of troops at.....	1
Pregnant females, treatment of.....	97	St. Helena, medical report from	17
Pregnant females, diseases of the geni- tals in	97	St. Helena, diseases of	19
Priesnitz' sweating regimen	523	Salivation	100
Professional aphorisms	531	Sanatory effects of tobacco	344
Prolapsus recti, new operation for ..	515	Sanguineous tumor of the labia	113
Provincial Med. and Surg. Association, Transactions of the.....	397	Sarcomatous growths.....	377
Pruritus of the vulva	98	Scabies, M. Cazenave on	198
Prussia, Medical Relief in.....	345	Scarlatina, connection of albuminous urine with	254
Puerperal fever, Dr. Locock on.....	92	Sclerotitis	58
Puerperal women, convalescence of ..	109	Scrofulous ophthalmia	485
Puerperal fever	114	Scrofulous ophthalmia, chronic.....	486
Puerperal peritonitis	114	Scrophulous ophthalmia.....	50
Puerperal hysteritis	114	Seamen, employment of.....	301
Puerperal mania	118	Seamen, berthing of	302
Pulmonary consumption, Mr. Boding- ton on	581	Secreting glands, Muller on	189
Pulse, frequency of the, in infants ..	512	Secretion, physiological corollaries on ..	192
Purulent ophthalmia	53	Shoulder-joint, dislocation of	249
Purulent ophthalmia of children	269	Sickness, &c. of Troops in Western Africa	1
Purulent ophthalmia	479	Sickness, &c. of troops in St. Helena..	1
Purulent ophthalmia in the adult	479	Sickness, &c. of troops at the Cape of Good Hope	1
Purulent ophthalmia in the infant ..	483	Sickness, &c. of troops at the Mauritius	1
Pustular ophthalmia	478		
Pyrosis.....	101		

- Sierra Leone 2
 Sierra Leone, climate of..... 3
 Sierra Leone, mortality of troops at.. 6
 Sierra Leone, diseases of..... 7
 Skin, Dr. Thomson on diseases of... 583
 Small-pox and cow-pox, affinities between 398
 Small-pox after small-pox..... 403
 Smart on division of the ham-string tendons 281
 Solutio magnesiæ bicarbonatis 597
 South American station..... 307
 Sphincter, removal of, for prolapsus ani 573
 Splenic engorgements, influence of, on agues 196
 Squinting, cure of 281
 Squinting, operation for the cure of.. 537
 Stammering, remarks on 489
 Statistics of pneumonia 491
 Statistics of amputations 559
 Stevens on tumors 275
 Stomach and duodenum, cramps of the 101
 Stone, operation for 419
 Streeter on abortion 178
 Stricture, Cooper on the treatment of 244
 Studentships in anatomy 283
 Study of rare cases..... 547
 Subcutaneous wounds, M. Guerin on 225
 Subcutaneous orthopædy, M. Guerin on 519
 Subcutaneous incision of joints, M. Guerin on 519
 Subluxations of the femur..... 520
 Suggestion in paracentesis thoracis .. 492
 Suicide, Winslow's anatomy of 161
 Surgical works, fallacies in 211
 Surgical cases. Norris 553
 Surgery, retrospective address in... 47
 Surgery, practical, cyclopædia of... 362
 Surgery and Medicine, Lisfranc on .. 193
 Swan's comparative anatomy of the nervous system 172
 Sweating regimen of Dr. Priessnitz .. 523
 Symonds' Dr. retrospective address .. 576
 Sympathetic irritation, disorders from 100
 Syphilitic ulcers, ioduret of iron in .. 534
- T.
- Tagebuch einer medicinischen reise nach England 62
 Tapping, new instrument for..... 548
 Taste, fastidious 100
 Testimonial to Sir B. Brodie 285
 Tobacco, Dr. Cleland on 332
 Tobacco, history of 334
 Tobacco, importation of, into Europe 338
 Tobacco, analysis of 343
 Tobacco, action of 344
 Tobacco, sanatory effects of 344
 Toothache 100
 Towns, medical relief in 345
- Trousseau on pommade ammoniacale 203
 Tulloch's military medical report 1
 Tumor, laminated adipose 373
 Tumors, operative surgery of..... 275
 Tumors of the scalp, extirpation of .. 275
 Tumors, solid, extirpation of..... 276
 Tumors, adipose 372
 Tweedie's library of practical medicine 81
 Tyrrell on diseases of the eye..... 472
- U.
- Undue lactation, Dr. Ashwell on 241
 Unfermented bread..... 284
 Ununited fracture 553
 Ure on blisters 154
 Ure on burns and scalds..... 160
 Urea, proportion of, in diseased fluids 268
 Ureters, spasm of the 107
 Urinary calculi, grey deposit on the.. 204
 Urine, incontinence of, in pregnancy 107
 Urine, retention of, in pregnancy.... 107
 Urine, milk in, during gestation ... 270
 Urine, Lecanu on the..... 432
 Urine, incontinence and retention of, 513
 Uterine appendages, inflammation of 114
 Uterine phlebitis..... 114
 Uterine lymphatics, inflammation of 115
 Uterus, rheumatism of the 99
 Uterus, rupture of the..... 115
- V.
- Vaccination section, report of the... 397
 Vaccination, protecting powers of .. 403
 Vagina, discharge of watery fluid from 98
 Vagina, inflammation of the..... 114
 Vagina and uterus, rupture of the... 115
 Vaginal leucorrhœa 98
 Vaginal cystocele, new operation for.. 433
 Varicose veins..... 108
 Variolæ Vaccinæ, Mr. Ceely on the . 408
 Varrentrapp's tour in England 62
 Veins, introduction of air into the... 279
 Velpeau on ophthalmic surgery..... 49
 Ventilation 306
 Ventriloquism, physiology of..... 527
 Vesicant, heat as a 204
 Vulva, pruritus of the 98
- W.
- Walshe on cancer 362
 Wardrop on bloodletting 155
 Weight and pulley for fractures..... 47
 Weights in France, new system of... 529
 Wells on the diseases of bones 155
 Wells on bronchotomy 155
 West Indies and North America 320
 Western Africa, sickness of troops there 1
 Williams on the ear 73
 Wilson's naval med. statist. report .. 297
 Winslow's anatomy of suicide 161
 Wound of the knee..... 248
 Wound of the palm of the hand..... 554



9



9

